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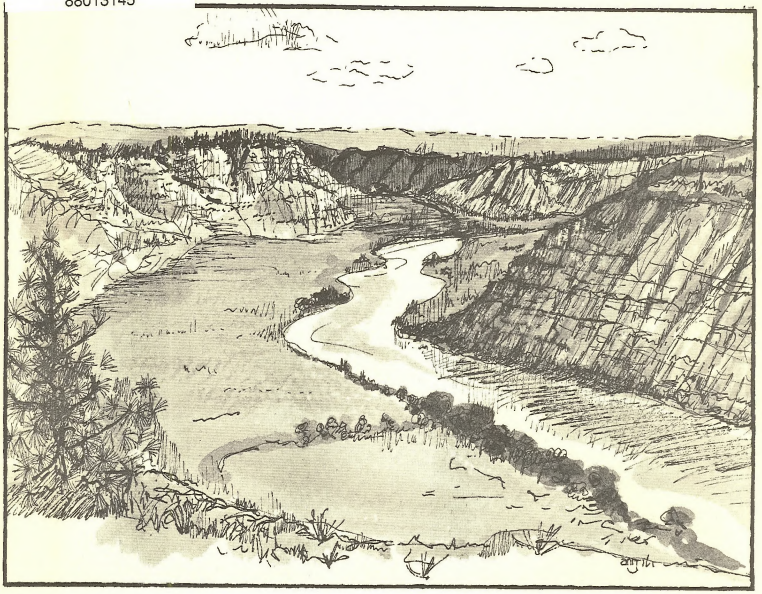

Upper Missouri National Wild & Scenic River

LAND ACQUISITION

Programmatic Environmental Assessment

December – 1982

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UPPER MISSOURI NATIONAL WILD AND SCENIC RIVER ACQUISITION

PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

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NOVEMBER 1982

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LEWISTOWN DISTRICT OFFICE
LEWISTOWN, MONTANA

EA Number MT-060-06-2-10
Replaces MT-060-06-9-10

SUMMARY DECISION

The proposal analyzed in this programmatic environmental assessment is for the Lewistown District of the Bureau of Land Management to acquire fee title, scenic easements, and/or public use easements on lands of significant public value within and adjacent to the corridor of the Upper Missouri Wild and Scenic River. Lands or easements could be acquired through donation, purchase or exchange.

The analysis indicates that most consequences of this action would be beneficial, especially for public uses and the preservation of environmental values on private lands acquired by BLM. Negative consequences could possibly occur on public lands to be transferred to private ownership, but these should be relatively insignificant because lands containing significant public resource value will not be exchanged. These values will be determined when the lands are first inventoried for exchange purposes and later when exception analyses are conducted for the programmatic environmental assessment.

As required by Section 102 of Public Law 91-190, it is declared that this proposal is not a major Federal action which significantly affects the quality of the human environment; and is not highly controversial in regard to unresolved conflicts concerning the use of resources. Therefore, no environmental statement is required on the proposal.

The proposed acquisition program and use of this programmatic EA, including all mitigation recommended, is approved. However, each specific acquisition and/or exchange filed against this programmatic will require an additional approval or denial.

Glenn W. Freeman
District Manager

SUMMARY

This programmatic environmental assessment presents information on a proposed BLM acquisition program of lands or interests in lands within and adjacent to the Upper Missouri Wild and Scenic River Corridor (UMWSRC). Public ownership of these lands is desired so that the purposes for which this area was established can be fully realized.

Lands or easements could be acquired by purchase, donation, or exchange. Acquisition through exchange is the method most feasible at this time due to the lack of funds for purchase. Acquisition through exchange might occur using several methods - direct trade of roughly equal value public land parcels for private land parcels, or by grouping or "pooling" several public land parcels in order to identify sufficient exchange value to match the desired acquisition. In all cases a determination must be made that the public interest will be well served by making an exchange.

Beneficial consequences are mostly anticipated from acquiring the river lands. Recreational access and public facility sites would be obtained. Aesthetic and cultural values would be preserved as public ownership would insure that no land use activities would be permitted that would negatively impact these values. In other words, successful acquisition of certain lands would allow full public use of the wild and scenic river area to continue while preserving the integrity of the natural surroundings. Without such an acquisition program, future public needs may exceed the capability of the UMWSRC and some degradation of the natural features of the area could occur.

Negative consequences to some components of the environment would be anticipated on the lands selected for disposal. However, lands in this category would be subjected to clearance and review procedures which would lessen the impacts significantly. These procedures would reveal which lands should not be disposed of because they contain resource values important to the public such as cultural sites or critical wildlife habitat. The principal recreational pursuit on scattered tracts is hunting. However, in many cases, a change in landownership would not change the recreational value of the land because access is controlled by the owner of the surrounding lands and the terrain on the most valuable wildlife habitat would prevent agricultural practices.

The only alternative to the proposed action considered in this document is for BLM not to go forth with the acquisition program. If this alternative were selected, BLM may not be able to accommodate future public demand for use of the river, and some natural values which contribute to a wild and scenic river could be destroyed in the long term. BLM would retain the scattered tracts considered for disposal which will likely prove not to be public assets. Land use on these tracts would continue to be grazing and the character of the lands would remain the same.

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CHAPTER I

INTRODUCTION

BACKGROUND

The 149 mile segment of the Missouri River from Fort Benton downstream to the Fred Robinson Bridge (U.S. Highway 191 crossing) was designated by Congress as a component of the National Wild and Scenic River System late in 1976. As a result of the Congressional action, the "Upper Missouri Wild and Scenic River Management Plan" was prepared in order to direct the administration of resource programs associated with the Missouri River on a multiple use planning basis (BLM, 1978) (See Appendix 1.1). This reach of the upper Missouri is considered an irreplaceable legacy of the historic American west, as well as one of the most important recreational areas of central Montana.

In order to protect the resource values for which the Upper Missouri Wild and Scenic River was established, the Bureau of Land Management (BLM) would like to acquire key tracts of privately-owned land along this stretch of river. Acquisition could occur either through donation, purchase or exchange. History has shown donation seldom occurs. At this time, acquisition by direct purchase is not feasible because funds are not available. If funds should become available in the future, purchase could be pursued. Currently the most likely method of acquiring key lands in the river corridor is through exchange.

Existing public lands which have potential for exchange are generally isolated tracts of from 40 to 160 acres. Some are suitable for agriculture and are surrounded by privately-owned lands already converted to agricultural practices.

PURPOSE AND NEED

BLM is required to prepare an environmental assessment (EA) on management actions which may affect the environment in compliance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality regulations.

The purpose of this EA is to analyze anticipated resource, social and economic impacts from BLM's proposal to acquire tracts of land along the Missouri River or from disposing of, by exchange, public land tracts for these river tracts. Through this analysis process, values will be determined that will guide the District Manager in deciding which tracts of privately-owned land along the river should be acquired and which publicly-owned tracts administered by the BLM and outside the river corridor should be disposed of.

RELATIONSHIP OF THE PROPOSAL TO LAND USE PLANS

The acquisition of private lands along the Missouri River is consistent with the Upper Missouri Wild and Scenic River Management Plan. This plan indicates that either fee title or easements may be acquired by purchase, donation, or exchange.

Only 3% of the public lands in the Lewistown District are generally identified for disposal in Management Framework Plans (MFPs). Less than 1% are specifically identified for disposal. All the public lands in the District are covered by MFPs.

Disposal of public lands was not a significant issue covered in past land use plans. This could account for the low percentages of public lands generally and specifically identified for disposal. This programmatic EA along with site specific exception analyses and land reports will constitute a Category One amendment (Appendix 1.2) to existing land use plans (MFPs). These amendments will specifically address disposal opportunities, and will provide the site specificity needed before any disposal takes place.

HOW THIS DOCUMENT WOULD BE USED

When acquisition of lands along the Upper Missouri Wild and Scenic River is proposed, the merits of both the land being acquired and the land being disposed of (environmental, social and economic values) and how they would be impacted from the proposal would be compared to the analysis contained in this document. This document would then function as a reference document each time such an acquisition is proposed. It would be programmatic in nature and would pertain to all similar actions.

Environmental reporting on individual proposed land acquisitions would be by reference to this programmatic EA. The analysis process would be documented by filing Form M-06-1790-6, Land Use Proposal/EA Clearance Review Sheet (Appendix 1.3) in the Environmental Documentation/NEPA Compliance section of the Land Report (Appendix 1.4). Consequences of impacts not anticipated or documented in the program EA would be discussed and attached to the review sheet as a narrative exception analysis.

The EA (cover sheet, exception analysis, and any additional site-specific documentations) would be made available to anyone wishing to inspect the analysis for each acquisition.

CHAPTER II

PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION

The Upper Missouri Wild and Scenic River Acquisition Program is a land acquisition effort that, when completed, would protect critical resource values in the long term, enhance the BLM's management opportunities for public lands along this nationally recognized waterway, and assure opportunities for continued public use. Goals and priorities were established in the Upper Missouri Wild and Scenic River Management Plan. This plan indicates that acquisition priority involving any privately-owned property would be conducted with willing property owners. It is estimated that as much as 1/3 of the private land adjacent to or within the corridor would warrant acquisition.

Priority in the expenditure of funds for fee acquisition or scenic easement will be given to:

1. administrative sites, watercraft launch and take out points;
2. historic or cultural sites;
3. campsites within all segments of the river;
4. significant features within wild river segments;
5. significant features within scenic river segments;
6. all other lands determined to be necessary for maintaining wild and scenic river values.

Riverside lands could either be purchased directly from the owner or could be acquired through exchange for public lands. At this time, direct purchase of lands adjacent to the river does not seem feasible because of lack of funding. However, in the future, this type of transaction may become a viable program. Land ownership within the wild and scenic river corridor (rim to rim boundary portions) consists of 87,088 acres public lands (66%); 34,479 acres private lands (26%); 10,273 acres state lands (8%), for a total land base of 131,840 acres. These totals include island areas, but not water surface acres.

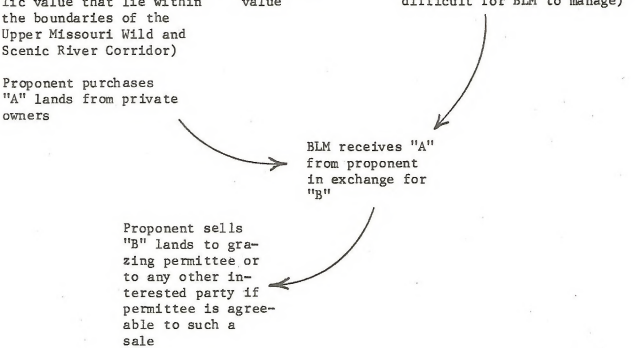
Shoreline ownership on the north bank of the Missouri River within the total management area consists of 66.15 miles federal ownership (43.6%); 4.91 miles state ownership (3.2%); and 81.57 miles privately-owned lands (53.2%).

Shoreline ownership on the south bank within the total management area is 62.64 miles federal ownership (40.9%); 8.26 miles state ownership (5.4%) and 82.08 miles privately-owned lands (53.7%).

In lieu of purchase, the Lewistown District is proposing to implement an exchange pooling effort. Exchange pooling is a method of identifying private and public lands that can be used in high priority public interest exchanges. The public lands identified for disposal are matched with private lands BLM would like to acquire to form exchange packages with equal monetary values on each side. Opportunities for such

packages are identified by a proponent (a private citizen or his representative). A package is an adjustment or consolidation of landownership into a more desirable and workable exchange. The proponent would provide clear title for the numerous parcels involved in the process, and significantly reduce BLM's workload. It is anticipated that almost all eventual recipients of public lands to be exchanged would be the current range user and/or adjacent landowner. Most acquisitions and disposals will involve surface estate only (See diagram below).

LAND EXCHANGE POOLING



Regardless of the method of acquisition used to obtain these desired river lands, the analysis contained herein identifies the types of impacts that would occur. Thus, this document should function as a reference for any method of acquisition undertaken.

ALTERNATIVES TO THE PROPOSED ACTION

The only real alternative to BLM's acquisition of key lands within the Upper Missouri Wild and Scenic River Corridor (UMWSRC) is not to acquire them by any means.

Not attempting to acquire private lands along the UMWSRC could result in the loss of opportunity to manage these lands in the best public interest. This loss of opportunity could occur in a number of ways including: a private landowner denying access to these lands; converting his lands to more intensive agricultural practices or proceeding with other developments detrimental to the environment. It's also more likely that

cultural, historic and scenic values in the UMWSRC would be lost under private rather than public ownership. These changes, or losses, may not occur quickly, but as mans' requirements of the land increase, the likelihood of their happening increases.

The lands identified for acquisition are of greater public value than the lands identified for disposal. Disposal lands are generally not a public asset since the cost and dificulty of managing them often outweighs the public benefit received.

If BLM doesn't pursue this acquisition program, neither the beneficial or negative impacts to the lands (both acquisition and disposal lands) as discussed in Chapter III would occur.

CHAPTER III

AFFECTED ENVIRONMENT

This chapter describes the environment of lands which may be impacted by the proposed action.

Part "A" refers to lands along the Upper Missouri Wild and Scenic River (Figures 3.1 and 3.2) which BLM would like to acquire. Part "B" refers to those isolated tracts which BLM would be willing to dispose of in order to acquire river lands.

"A" - UPPER MISSOURI NATIONAL WILD AND SCENIC RIVER (LANDS BLM WOULD LIKE TO ACQUIRE)

CLIMATE AND AIR QUALITY

The climate along the Missouri River in central Montana is marked by extreme changes. Large scale fluctuations of temperature and humidity can occur daily as well as seasonally. The complex topographic system of coulees, buttes, and ridges in the area has a pronounced influence on the distribution of precipitation, wind, and the stability of the air. Annual precipitation is roughly classified as semiarid, although approximately 7 inches of the yearly total of 13.5 inches falls during the months of May, June and July.

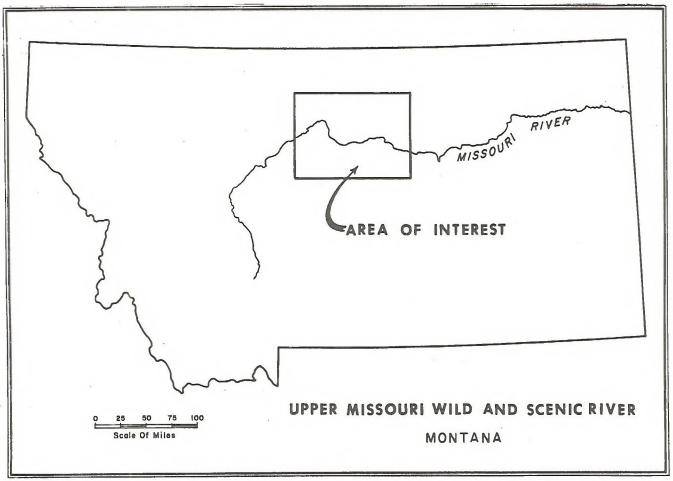
This climate is well within the limits of the modified continental type although some characteristics, such as the occurrence of warm westerly winds (chinooks), tend to moderate the mean temperature. The warm winds are more pronounced in the western portions of the area. In the winter, cold waves frequently associated with snow and below-zero temperatures occur 5 to 10 times each season. These cold spells seldom last more than 5 days at a time, but can produce minimums in the -20° F to -40° F range. Summers are pleasant with average afternoon maximums of approximately 90° F and comfortable nighttime minimums during July of 56° F. The growing season lasts approximately 120 days.

Air quality in the general area is excellent, principally due to the lack of industry and residences. There is evidence of an air inversion along the bottoms of the Missouri River during winter months. As the nighttime air cools, it tends to move downslope into the canyon bottoms where, because of stable circulation at certain periods of the winter, it becomes trapped. Air warmed by the daytime sun on the surrounding plains may move over the trapped layer inducing the inversion.

GEOLOGY AND TOPOGRAPHY

The Missouri River flows through a section of generally horizontal to slightly dipping sedimentary strata of upper Cretaceous age, crossing progressively younger beds of this series, representing 10 million years or more of time. During Cretaceous time (roughly 70 to 80 million years ago) most of the present Great Plains were beneath the waters of a great inland sea. This sea, however, did not continuously cover the Missouri River country. Occasionally, during the upper Cretaceous Period this area had seashore conditions with deltas and coastal plain deposits. Because the margin of the sea advanced and

Figure 3.1 Upper Missouri Wild and Scenic River



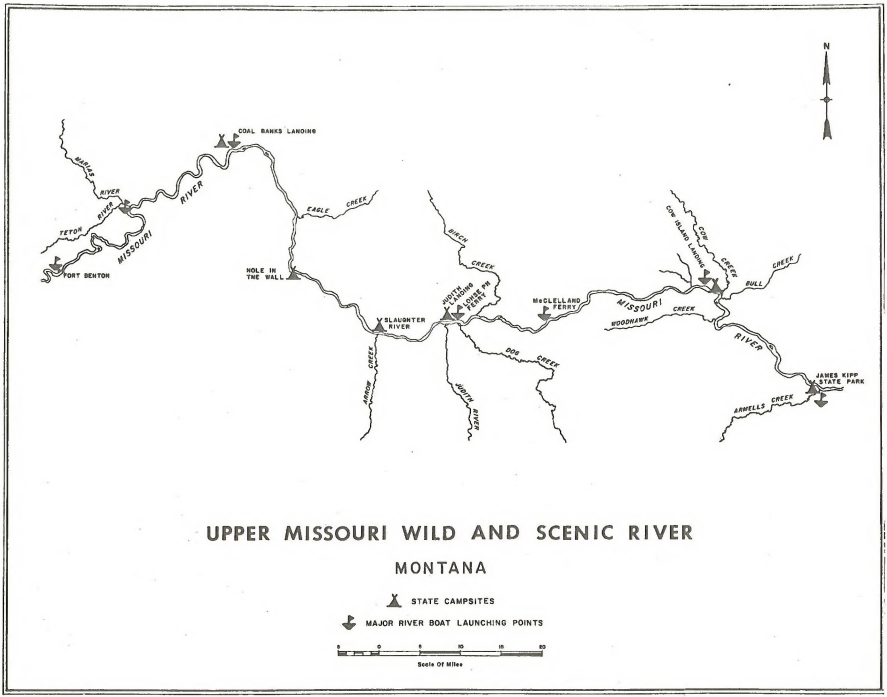


Figure 3.2: Upper Missouri Wild and Scenic River

retreated, the varied rocks - some marine deposits with sea animal fossils, some land deposits with coal and dinosaur remains - represent a rather complete record of changing geologic conditions.

After deposition of the sedimentary rocks and before the location of the river in its present course, an upwelling of the earth's crust occurred at the site of the present Bears Paw Mountains causing the sedimentary rocks to arch upward. Later, extrusion of volcanic material on top of this arch caused an unstable condition which resulted in rocks sliding off the arched area towards the plains below. This slippage occurred along thrust fault planes which extend outward from the Bears Paw Mountain area distances of up to 35 miles. These faults broke through to the surface and manifest themselves as steeply dipping rocks adjacent to flat lying rocks. The fault plane itself can rarely be seen because it's lost in the thick shale beds. On the state geologic map, the effect of these faults is seen as slices of Judith River formation showing through the Bearpaw formation.

The Missouri River flows through a relatively deep valley varying from 500 to 1,000 feet below the average elevation of the adjacent plains. The soils are extremely unstable. Erosion and tributary drainage have produced highly dissected, rough terrain, resulting in scenic badlands and breaks. These breaks and bluffs are from 2 to 10 miles in width, adjacent to the river valley, and of lesser width along tributary streams. This greatly eroded section of the region is commonly known as the Missouri River Breaks.

A comprehensive discussion of the geology of the area by river segment can be found on pages 41-53 of the Upper Missouri Wild and Scenic River Management Plan (BLM, 1978).

MINERALS

Most of the recent mineral activity near the river has been exploration for shallow natural gas reservoirs, primarily in the Cretaceous Eagle and Judith River sandstones. These two formations are usually less than 2,000 feet deep and are the reservoirs from which Montana's most productive gas field, Tiger Ridge, on the north flank of the Bearpaw Arch is producing.

As stated in the Geology section, local uplift of the Bearpaw Arch and subsequent plainsward sliding of the Cretaceous sediments caused both radial and concentric thrust faulting. The faults are of the reverse type as shown in Figure 3.3.

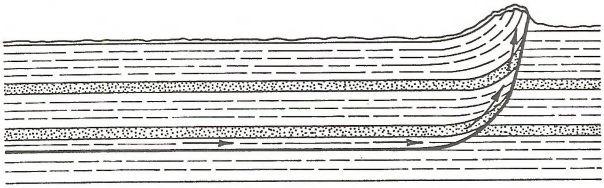


Figure 3.3: Reverse Faults

Permeable sandstones, depicted by the dotted formations, were thrust up against impermeable shales, shown by the dashed formations, thus forming a structural reservoir where gas may be trapped.

Within the last 4 years, four natural gas fields have been designated south of the Bears Paw Mountains (Figure 3.4); the Sherard, Bullwacker, Leroy and Sawtooth Mountain fields. There are many shut-in gas wells outside of these designated units which will probably be incorporated into one of the fields. These same wells indicate a high probability that more producible wells will be drilled throughout the area.

Bentonite can be found in all three shale formations exposed in the management area. The bentonite beds vary in thickness, but are generally less than 18 inches thick. Samples were taken from various beds. Analysis revealed that some were satisfactory for brick, while others were suitable for light weight aggregate and possibly for foundry sand. However, overburden ranges from 50 to 100 feet thick, making these bentonites noneconomical at this time.

The Upper Missouri Wild and Scenic River also contains diatremes which could bear diamonds. There are mining claims in the UMWSR Corridor but no diamonds have been discovered to date and the potential for such discoveries is low.

Public lands within the wild segment of the river are withdrawn from mineral development. Section 9 of the Wild and Scenic Rivers Act (Public Law 90-542, October 2, 1968) as amended, subject to valid existing rights, withdraws from all forms of appropriation under the mining laws and from operation of the mineral leasing laws all Federal lands which constitute the bed or bank or are situated within one-quarter mile of the bank of any wild river. Beginning on October 12, 1976, no new mining claims could be located on public lands within the exterior boundary of the river corridor until regulations are issued by the Secretary of the Interior.

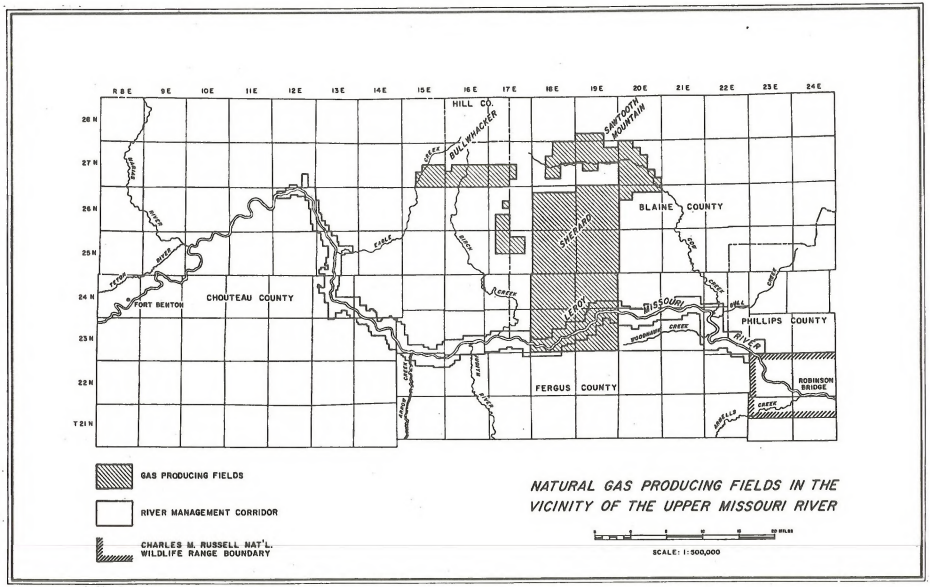
SOILS

Soils are mixtures of weathered rocks and minerals, organic matter, water and air. Variations in any of these components is what differentiates one soil from another. During soil formation, five factors interact to give the soil physical characteristics at a specific location. These include parent material, climate, plant and animal life, topography and time. In the vicinity of the Missouri Breaks area, parent materials may vary considerably over short distances. Likewise, the topography varies from flat stream terraces to steep badlands. Consequently soils are highly variable throughout the area.

On the nearly level to rolling plains above the river, deep (40 inches or more in depth), well drained, clay loam and silty clay loam soils have developed. Salt is picked up from Cretaceous formations and deposited in low-lying areas and drainages. Clay pans, or small areas of bare ground having a dense compact clayey layer in the subsoil, have developed on some of the low terraces and along some of the drainageways.

Soils of the high benches and piedmont fans are generally well drained loams of varying depths. Some of these soils have a high lime content in the subsoil with layers of gravel.

Soils of the rolling residual uplands vary in depth and usually have textures of loam, clay loam and clay. These soils can range from shallow (10-20 inches in depth) to deep (40 inches or more in depth) over shale and to a lesser



NATURAL GAS PRODUCING FIELDS IN THE VICINITY OF THE UPPER MISSOURI RIVER

extent over sandstone. Rock outcrops are common along the portions of the Missouri River canyon walls. Large areas are affected by variable amounts of saline-sodic conditions which are responsible for much of the moderate to severe erosion hazards.

Soils of the river floodplains and low terraces within the management area, are predominantly deep, well drained soils that have formed in stratified alluvium of mixed mineralogy. These soils generally have a loam texture on the surface and are generally underlain by textures ranging from loam to fine sandy loam. Permeability is moderate and runoff is slow.

This area also contains smaller areas of deep, well drained soils that have formed in calcareous clayey floodplain and river terrace deposits. These soils have silty clay loam textures on the surface and are underlain by textures ranging from clay to clay loam with thin strata of loam, silt loam and fine sandy loam. Permeability is slow and because of their level position, runoff is slow.

WATER

The Missouri River carries an average annual volume of 5,622,000 acre-feet as it enters the Wild and Scenic River area at Fort Benton. The average streamflow of 7,759 cubic feet per second (CFS) at Fort Benton is discharged by a 600 foot wide channel which averages 3 feet in depth. The channel widens to over 1,000 feet in many areas where islands have forced the river to spread laterally. At the community of Loma, the Marias River adds approximately 590,000 acre-feet per year, augmenting average streamflow by about 8,000 cubic feet per second. The velocity of the river decreases to about 4 miles per hour and the average depth increases to about 3 1/2 feet. Below the Marias River confluence about 525,000 acre-feet are contributed annually by tributaries joining the Missouri above Robinson Bridge, the largest of which is the Judith River. The tributaries increase the average streamflow in the Missouri by about 725 cubic feet per second to a total average annual flow of 9,284 CFS as measured at the Robinson Bridge station.

The Missouri River normally carries large sediment loads and has been popularly referred to as "The Big Muddy." There is an obvious increase in the amount of sediment transported by the river between Coal Banks Landing and the Robinson Bridge. This has been confirmed by analysis of water quality data obtained from U.S. Geological Survey studies at those locations.

Arrow Creek and the Marias and Judith rivers all contribute waters higher in sediment concentration than the Missouri. Turbidity analysis on these three tributaries in May 1977, indicated slight increases on the Missouri from the Marias and Judith rivers contributions while significant increases were observed below Arrow Creek. Silt loads added to the Missouri by Arrow Creek in July 1974, accounted for 41% of the river's total sediment load below the confluence (Montana State Water Quality Bureau, 1975). Other Missouri River tributary streams posing silt problems according to the Water Quality Bureau (1975) are: Bullwacker, Two Calf and Cow Creeks.

VEGETATION

The Upper Missouri River land acquisition area is an example of the central grassland vegetational type. Distinct plant associations have developed on varied land types found in the river corridor and are discussed by subheading below.

Islands and Sandy River Bottoms

Subirrigated and wetland sites are an important part of the acquisition land area.

River islands receive little to no use and the vegetation they contain is often in excellent, even pristine condition. The same plant communities on adjacent riverbanks are subject to heavy use from various sources and are often in very poor condition.

The wettest soils along island shorelines are covered with dense willow stands. Upslope from the willows, thick riparian cover occurs often in association with cottonwood and boxelder trees. In some cases, rose, snowberry and other shrubs produce thickets so dense that movement within them is difficult.

The following list illustrates plant relationships within these subirrigated and wetland associations.

Dominant Species Climax Vegetation	Plants Increasing With Utilization
Tall reedgrass	Kentucky bluegrass
Tufted hairgrass	Redtop
Slender wheatgrass	Low sedges
Bearded wheatgrass	Foxtail barley
Northern mannagrass	Horsetail
Prairie cordgrass	Golden pea
Tall sedges	Iris
Basin wildrye	Cinquefoil forbs
Canada wildrye	Thistles
Willows	Weedy forbs
Cottonwood	Annuals
Boxelder	

Cottonwood trees are essentially limited to wetland habitat. They and the willows usually found growing around them exert a stabilizing influence on river bottom ecology. There is a growing concern, however, that many existing cottonwood stands are deteriorating without adequate reestablishment. Many conditions hamper the reproduction of the cottonwood and one of the most significant is the river itself. Cottonwood reproduction occurs mostly on recently deposited alluvium or river floodplains where trees are subject to periodic flooding, severe soil erosion or deposition, grazing or trampling by livestock, beaver damage, mistreatment by campers and, as mentioned above, exposure to intense abrasive action of river-borne ice flows and debris.

Environmental restrictions tend to confine cottonwood regrowth to relatively few favorable locations. The trees are a valuable but tenuous resource that may be no more plentiful now than when Captain Meriwether Lewis described them in his diary. He mentions that no timber exists on the hills and only a scattering of cottonwood, ash and boxelder are to be seen along the river.

Much more must be known of the cottonwood and its environment if its numbers are to be adequately maintained in the future.

Alluvial Fans and River Terraces

Silty, saline, clayey and even gravelly soils can be found in alluvial fans. Most fans are silty and blue grama grass is the most common plant form. Blue grama is a strong competitor, prone to form dense sods restricting establishment of more desirable plant species. Thin stands of western wheatgrass may appear on the denser saline soils of the lower reaches and prickly pear cactus prevails in the distressed, gravelly upland portions.

Plant relationships found on silty soil sites (10 to 14 inch precipitation zone) are illustrated below:

Dominant Species Climax Vegetation	Plants That Increase With Utilization
Needleandthread	Blue grama grass
Western wheatgrass	Needleandthread
Thickspike wheatgrass	Sandberg's bluegrass
Green needlegrass	Threadleaf sedge
Basin wildrye	Golden pea
Prairie junegrass	Fringed sagewort
Native legumes	Weedy forbs
Silver sagebrush	Big sagebrush
Blue grama	Broom snakeweed
	Plains prickly pear
	Clubmoss

Clay and shale river terraces contain saline soils dominated by western wheatgrasses and salt tolerant shrubs such as greasewood and saltbush. These communities are more resistant to change than those on silty soils, mainly because clay is less prone to compaction. In addition, western wheatgrass is rhizomatous and requires no seed source. As a result, response to improved growing conditions is more rapid on a clay bottom than can be expected on silty terraces.

Plant relationships common to dense clay and clayey bottoms (10 to 14 inch annual precipitation range) are as indicated below:

Dominant in Climax Vegetation	Plants that Increase With Utilization
Western wheatgrass	Big sagebrush
Thickspike wheatgrass	Sandberg's bluegrass
Green needlegrass	Golden pea
Basin wildrye	Curlycup gumweed
Prairie junegrass	Eriogonum
Nuttal's saltbush	Other weedy forbs
Greasewood	Plains prickly pear
	Annuals

The River Breaks and White Rocks

Thin break, badland, shallow clay and shaley soil growth sites are intermingled in the break and white rock zones. Patchy stands of scrubby

ponderosa pine, limber pine, Douglas-fir and Rocky Mountain juniper often overlay a brushy understory of skunkbush sumac, chokecherry and rubber rabbitbrush. Yucca and prairie sandreed are found on open sandy soils surrounded by other plant forms common to that environment. On the silty-sandy soil association, bluebunch wheatgrass, plains muhly, needleandthread and Indian ricegrass appear. As moisture increases in finer grained soils, green needlegrass, western wheatgrass, big sagebrush and finally greasewood, follow.

The above plant associations are generally in excellent condition as a result of natural protection afforded by the rough topography of their habitat.

River break plant associations (10 to 14 inch annual precipitation zone) are as follows:

Dominant Plants Climax Vegetation	Plants that Increase With Utilization
Ponderosa pine	Needleandthread
Rocky Mountain juniper	Blue grama grass
Limber pine	Sandberg's bluegrass
Douglas-fir (north slope)	Prairie junegrass
Bluebunch wheatgrass	Threadleaf sedge
Western wheatgrass	Big sagebrush
Thickspike wheatgrass	Rabbitbrush
Green needlegrass	Creeping juniper
Prairie sandreed	Fringed sagewort
Basin wildrye	Pussytoes
Needleandthread	Hairy goldenaster
Greasewood	Other weedy forbs
Big sagebrush	Annuals
Creeping juniper	
Native legumes	
Prairie junegrass	

Upland Benches

High benchlands interspersed among the eroded breaks are seldom seen by river boaters although an abundance of these important landforms remain within the land acquisition area. Their surface soil mantles are usually silty and the predominant plant community is blue grama grass, needleandthread and Sandberg's bluegrass with western wheatgrass appearing on pockets of heavier soil. In a few locations these bench top soils are shallow clay or shale, the situation is then reversed and western wheatgrass becomes dominant.

Plant associations common to the benches are the same as those indicated under the "silty" and "clayey," "dense clay" and "saline upland" type listings for the previous "Alluvial Fan and River Terrace," discussion of this section.

Ecologically Unique Zones

A rough fescue (Festuca scabrella) community has been found on the north side of the Missouri River downriver from the Stafford Ferry. The stand is unique

in the badlands since the nearest known locations of similar grass plants are some distance away in the Bear Paw, Little Rocky and Judith mountain ranges. Even in its natural mountain habitat, abundant rough fescue grass is rare.

Rare and Endangered Plant Species

None of the rare, threatened or endangered plant species listed by Federal agencies are known to exist within the Upper Missouri River Land Acquisition Area.

FORESTRY

The most common tree forms found within the land acquisition area are:

Common Name	Scientific Name
Inland boxelder	*Acer negundo*
Ponderosa pine	*Pinus ponderosa*
Douglas-fir	*Pseudotsuga menziesii glauca*
Rocky Mountain juniper	*Juniperus scopulorum*
Plains cottonwood	*Populus sargentii*
Limber pine	*Pinus flexilis*
Willow	*Salix spp*

Most of these trees were part of the Missouri River ecological system when Lewis and Clark passed through the area in 1805.

Use of forest products by people native to this region was minimal. However, the white man's demands for wood were much greater. The trading posts at Fort Piegan, Fort McKenzie, Fort Chardon, Fort Lewis, Fort Nottingham and Fort Claggett were all built with timber cut along the Missouri. Expanding military forces in the territory cut trees to build Camp Cooke and Camp Otis and to construct summer camps at Dauphin Rapids and Cow Island. In addition, the steamboat port communities of Fort Benton, Eagle Creek and Judith Landing needed large amounts of wood for construction, heating and other day-to-day uses. It was the steamboats, however, that eventually imposed the biggest burden on timber stands along the Missouri River. Every steamboat making its way up the river between 1860 and 1890 used an estimated 25 to 40 cords of wood daily. Woodhawks took all this fuel either from river bottom groves or timber stands in the adjacent breaks.

The steamboat era ultimately brought permanent settlers and then homesteaders. Their much needed buildings, corrals, fence posts and firewood ultimately had to come from the same source. As latter day homesteaders began to occupy prairie lands far from the river, they often introduced exotic species such as Russian olive, black and honey locust, basswood and others for windbreaks and the landscaping of their buildings. Many of these species are still in existence, locally.

The end of the homestead era was accompanied by a decline in the demand for broadleaf trees growing close to water and even for the pines, junipers and fir trees found on the steeper slopes and rough coulees adjacent to the river. Today's ranchers occasionally cut fence or corral posts along the river but most people are content to merely enjoy the trees and use existing groves for sheltered campsites, livestock shade, etc.

GRAZING BY LIVESTOCK

The rough, broken terrain within the Upper Missouri Wild and Scenic River boundary limits most land use to grazing. Some cultivation occurs in isolated locations, but the best use of the land remains recreation and production of livestock. The vegetal associations have evolved over long periods of sustained use. An account in the diary of David Thompson records an observation of the Piegan Indians stating that bison sometimes grazed along the Missouri River during the summer and following fall until the ground was bare and the bison could no longer remain in that location (England and Devos, 1969).

Much of the grazing within the acquisition area occurs on lands administered by the Bureau of Land Management. Grazing of livestock is recognized as an important use of the resource and at present, 54 public grazing authorizations are permitted or leased in the river management area under either Section 3 or 15 of the Taylor Grazing Act of 1934.

A check of the rangeland condition on 12,377 acres of Federal and non-Federal acres contained in 27 river terraces and bottoms within the acquisition area disclosed 16% of the rangeland to be in "good" condition, 83% in "fair" condition and 1% was classified as being in "poor" condition.

The intent of the Federal range program, with regard to the Missouri River, is to complete and/or implement enough allotment management plans (AMPs) in the river management area to significantly improve the rangeland environment. An allotment management plan is a document or detailed grazing plan prepared in consultation with each Federal range user which sets forth the methods, objectives and goals for management of each allotment.

WILDLIFE

At the present time, 60 species of mammals, 233 species of birds, 20 species of amphibians and reptiles and 49 species of fish inhabit the Missouri Wild and Scenic River Area (a detailed list of individual species is available in the Lewistown District Office).

Major Game Species

Mule deer are an important big game animal along the river. They are closely associated with the breaks and adjacent agricultural lands. In the past, low mule deer populations in the lower half of the river have been due to poor productivity and/or survival. Populations in the upper half of the river are usually in somewhat better condition. Currently, high populations exist in both areas. Seasonal distribution of this species shows a preference for grassland-sagebrush and riparian type vegetation in the spring and summer, moving to the heads of the breaks and benches in the winter.

White-tailed deer are restricted to the narrow riparian habitat and agricultural lands along the river bottoms. During periods of heavy snow, these animals will move to the sagebrush-grasslands of the breaks. The river islands provide a major fawning area as well as supplying food and cover.

Where the terrain is open, with easy access to the river, small bands of antelope will utilize the sagebrush-grasslands on the river bottom in the summer. During the spring and fall, antelope utilize small adjacent grain fields. During severe winters, antelope will migrate into the breaks for shelter and food.

The last native elk was believed to have vanished from the breaks during the 1860s. This specie was reintroduced in 1951 and has increased to the point of providing some limited hunting opportunities. Recent Montana Department of Fish, Wildlife and Parks' reports show a westward expansion of their range along the river, as far west as Stafford Ferry.

Lewis and Clark reported seeing bighorn sheep along the river bluffs. This specie became extinct by 1916. A reintroduction by the Montana Fish and Game Department was made in 1958 and 1961. Forty-three Rocky Mountain bighorn sheep were placed in a 1,400-acre enclosure adjacent to the river within the Charles M. Russell National Wildlife Refuge. The herd grew to at least 90 animals, providing limited hunting until the winter of 1971-72, when a die-off occurred, reducing the herd to 23 animals where it remained until the winter of 1977-78. Another die-off occurred, reducing the herd to nine animals. Starvation was the apparent cause of mortality. A recent introduction of 26 animals in 1980 has been successful but the population has not reached huntable numbers yet.

Furbearers and Predators

Mink, beaver and muskrat are the most common furbearers found along the river. Coyotes are commonly harvested in this area for their fur. Other predators that are less commonly observed in the river area include the fox, weasel, skunk, bobcat and raccoon.

Birds

The great diversity and number of birds found along the river can be attributed to a variety of special habitats occurring there. The scattered narrow bands of riparian habitat contain the greatest number of bird species by providing more diverse foliage strata and a greater number of niches for food, cover and nest sites.

Canada geese and mallards are the primary waterfowl species nesting on the river. Canada geese almost exclusively nest on river islands. The largest number and variety of waterfowl occur during the fall migration when the birds utilize standing grain crops and marshes long distances from the river and return to the river for resting, cover and some feeding.

A variety of shorebirds are found on the river throughout the spring and summer.

Cottonwood groves provide nesting sites for great blue herons, cormorants, ospreys and raptors. To date, four great blue heron rookeries have been identified within the management area.

Where sufficient residual vegetation is available to provide nesting habitat and protection, several upland game birds occur. These include sharp-tailed

grouse, sage grouse, gray partridge, pheasants and Merriam's turkey. Sharp-tailed grouse are common and widely distributed on the benches.

The most common birds of prey include the buteo hawks, such as the redtail hawk and Swainson's hawk. Golden eagles are common and nest within the area. Bald eagles over-winter along the river, with some nesting pairs being reported.

Eighty percent of the passerine birds found within the river area are year-round residents. The range of eastern and western species overlaps where suitable riparian habitat exists. A late summer concentration of nearly 1/2 million doves has been reported by Montana Department of Fish, Wildlife and Parks observers.

Amphibians and Reptiles

Amphibians are primarily concentrated along side drainages and stream channels where there is riparian vegetation and surface water. Turtles are found in the Missouri River proper. Lizards and snakes prefer the sagebrush-grassland floodplains.

Fish

The Missouri River supports a significant fishery, with greater use being placed on this resource annually. The river has a greater diversity of aquatic habitats with a larger variety of fish species than many river drainages in Montana. Forty-nine species representing 14 families are known to occur in the river and its tributaries. Thirty-five species are found in the Missouri River proper, primarily warm water fisheries, with the remaining 14 species in tributaries, primarily cold water fisheries.

Snagging for paddlefish continues to be a popular fishing activity. Only seven known spawning populations of paddlefish exist today. One of those populations occurs in Fort Peck Reservoir and the Missouri Wild and Scenic River area. This is one of the last known "stable" populations of paddlefish.

Threatened and Endangered Species

The black-footed ferret is an endangered species with historical presence in the river area. Presumptive evidence of ferret activity has been found in the area, although no ferrets have been observed. Black-tailed prairie dog towns provide the necessary habitat requirements for the ferret. A number of prairie dog towns near the river might support a population of this species. Eleven prairie dog towns have been identified on the river floodplains.

The bald eagle is commonly sighted in the Missouri Wild and Scenic River area. The endangered peregrine falcon and prairie falcon have a history of nesting along the river. The Montana Department of Fish, Wildlife and Parks has reported a pair of peregrine falcons on the river. However, nest sites have not been located.

If these or any other threatened or endangered species are encountered they will be protected as provided by the Endangered Species Act of 1973 along with other Federal and state regulations.

CULTURAL RESOURCES

The Upper Missouri River area served as an environment for man from the Paleo-Indian inhabitation of the North American continent to the present time. Though no complete survey of the lands included in the management area has been made, some 173 historical and archeological sites have been identified.

Prehistoric

Large spear points found at a Missouri River site indicate the presence of the Paleo-Indian culture between 10,000 and 5500 B.C. The environment during this period of time was cooler and wetter than the present-day climate. Lush grasslands, swamps and lakes south of the continental glacial ice mass proved ideal habitat for herds of now extinct mammoths, camels and giant bison. The Paleo-Indians wandered in small groups pursuing game herds, the major source of their subsistence. Always on the move, the early big game hunters left little evidence of their presence.

Evidence of occupation of the Missouri breaks region during the Plains Archaic Period (5500 B.C. to A.D. 500) is comparatively more abundant than that of the Paleo-Indian Period. As the climate grew warmer and dryer, many of the large game species became extinct, and the subsistence patterns of wandering bands changed. Various kinds of animals, such as bison, antelope, deer, elk, smaller mammals, reptiles and birds fell prey to the hunter. Seeds, roots and berries were also collected. A change in technology occurred during the Plains Archaic Period with the atlatl and dart replacing the thrusting spear.

From A.D. 500 to about 200 years ago, the late prehistoric Indian frequented the Missouri River area in a climate like our own. About this time, another change in technology occurred with the bow and arrow replacing the atlatl and dart. Around A.D. 1700, the diffusion of the horse from European settlers to the south and east proved to be a major advancement for hunting bison on the plains.

Three prehistoric sites of particular interest on the river lands are: Thompson Bottom, Lost Terrace and Rusty Nail.

Historic

The Lewis and Clark Expedition traversed the Upper Missouri area in 1805 using the Missouri as a waterway route to the Rocky Mountains, westward to the Pacific Coast and again upon their return journey in 1806. Thirteen Lewis and Clark campsite locations and numerous place names in the area serve as reminders of the expedition by the "Corps of Discovery."

For years after the Lewis and Clark Expedition, the warlike Blackfeet kept the Upper Missouri area in a constant state of peril. Not until the fall or early winter of 1830 did an American Fur Company party from Fort Union penetrate the Upper Missouri and make contact with a band of Piegan Blackfeet. This meeting succeeded in establishing trade relationships with the Upper Missouri tribes and, in the fall of 1830, Kenneth McKenzie sent James Kipp with 44 men upriver to the mouth of the Marias where Fort Piegan was established. This fort was destroyed after the first season and a second fort was built. This post was

named Fort McKenzie and flourished until 1844 when it was abandoned because hostilities with the Blackfeet were renewed. A new post, Fort Chardon, was established opposite the mouth of the Judith River.

The following summer, another party led by Alexander Culbertson was sent out from Fort Union to try to recover the Blackfeet trade. He abandoned Fort Chardon and established a new post about 3 miles upriver from present-day Fort Benton. This post was named Fort Lewis in honor of Captain Meriwether Lewis. Culbertson was able to renew peaceful contacts with the Blackfeet and Fort Lewis was the scene of brisk trading activity until 1847, when the fur company post was moved downriver approximately 3 miles to a site on the north bank of the Missouri. It was here that the new post, Fort Clay, soon to be renamed Fort Benton, became the most important trading center in Montana and later, the head of steamboat navigation on the Missouri River.

In 1833, the Upper Missouri was to see several distinguished travelers in the form of the German scientist, naturalist and explorer, Prince Maximilian of Wied-Neuwied and the Swiss artist, Karl Bodmer. The Prince's graphic written accounts of the "White Cliffs" area, the river breaks and life at Fort McKenzie have provided modern scholars with a priceless legacy. These accounts were ably illustrated by Bodmer who painted Missouri River scenes, the abundant wildlife and free-roaming Indian tribesmen.

The Fur Trade Era stimulated the first extensive use of the Missouri River as an avenue of transportation. Keelboats, mackinaws, bullboats and piroques canoes plied the upper river bringing trade items for the Indians and returning with furs bound for markets in the United States and abroad. The vast amount of capital to be obtained from such trading ventures encouraged steamboat captains to brave the rapids about Fort Union. In 1860, the first steamboat reached Fort Benton.

The discovery of gold in the northern Rockies in the 1860s gave increased impetus to steamboat use as the major means of transporting people and supplies to the gold fields. The heavy steamboat traffic created need for woodyards or refueling stations manned by colorful "woodhawks" who eked out a meager, lonely and dangerous existence. Their sandstone dugouts, cabins, deserted woodpiles and even their graves remind the Missouri River recreationists of this bygone era.

The last attempt at commercial use of the Missouri River occurred from 1909 to 1916 by river steamers. The Josephine, a government snag boat, made trips up the river as late as the 1920s. Today, a number of steamboat wrecks and other physical evidence of the steamboat era, can be found along the reaches of the Wild and Scenic Upper Missouri River. At least two homesteads are believed to be partially constructed from the remains of steamboat planking.

The confluence area of the Judith and Missouri rivers provided the setting for two important Indian peace councils. In 1846, the famous Catholic missionary, Father DeSmet and a band of Flathead Indians held a meeting here with the Blackfeet. In 1855, Washington Territorial Governor, Isaac Stevens conducted a large treaty council.

In 1866, the Army built Camp Cooke near the mouth of the Judith River. This location proved to be poorly chosen as there was very little for the

inhabitants of the fort to protect. The post was abandoned in 1870, but a trading post, Fort Claggett, was established in the same locality by T.C. Powers and Company, and it continued in operation for a few years longer.

During the mid-1800s, the Indian nations had suffered terribly from the effects of smallpox and other white men's diseases. In the latter half of the century, the buffalo herds were all but wiped out and the native inhabitants were placed on reservations away from the river.

Not only the Indian found himself displaced. As placer mining gave way to more expensive quartz operations, many miners left their camps to run cattle in the wide expanses of available land. The cowboy instituted the open range cattle industry. Other frontier types, including rustlers and vigilante groups, appeared on the scene.

The Great Northern Railroad crossed the continent in the late 1880s and with the railroads came the homesteaders. These bottom land farmers fenced the open range cattle country and attempted to cultivate the sage-covered river terrace. However, the valley of the Upper Missouri proved too harsh an environment for the small plot farmer. Drought, grasshoppers and isolation combined to drive the homesteaders from the area. The rustic frame and log structures of the Homestead Era line the river corridor today, reminders of dreams that were not to be. Today, the grasslands of the Upper Missouri are grazed by herds of cattle. Some irrigated farming takes place, although most of the Wild and Scenic River shows little evidence of modern man.

A number of Missouri River sites have been included in the National Register of Historic Places. These include the Grand Union Hotel in Fort Benton, the community of Fort Benton and the Fort Benton Historic District, Citadel Rock Slaughter River, the Lewis and Clark campsite at the Judith Landing Historic District and the Dauphin Rapids Historic District.

AESTHETICS

The River and Its Setting

The Missouri River flows through a relatively deep valley varying from 500 to 1,000 feet below the average elevation of the adjacent plains. The soils are extremely unstable. Erosion and tributary drainage have produced highly dissected, rough terrain, resulting in scenic badlands and breaks. These breaks and bluffs are from 2 to 10 miles in width adjacent to the river valley and of lesser width along tributary streams. This greatly eroded section of the region is commonly known as the Missouri River Breaks.

The Marias River, including its tributary the Teton, and the Judith River are the principal tributaries joining the Missouri River. These tributaries along with Shonkin Creek, Eagle Creek, Arrow Creek, Birch Creek and Cow Creek are the major drainages in the management area.

In addition to differences in the geologic components carved by the river, part of the contrasting scene is due to the differences in the amount of time the river, or preceding rivers have been cutting their way into the plains. In pre-glacial times, the river occupied its current channel along the first 42 miles between Fort Benton and Coal Banks Landing. At that time, the river was

directed northeasterly through the pre-glacial valley of Big Sandy Creek where it continued into the Milk River Valley. Between Fort Benton and Coal Banks Landing, the Missouri today occupies a nearly mature valley that is broad with some steeply inclined bluffs, straight to slightly meandering channel (sinuosity 1.05 to 1.39) and a well developed floodplain with numerous islands and groves of cottonwood trees.

The present-day valley of the Missouri River below Coal Banks Landing deepens and narrows towards the former drainage divides and broadens where it follows or crosses ancient valleys. Thus, today's valley below Coal Banks Landing gradually narrows and deepens towards the ancient Arrow Creek-Judith River Divide. As it approaches the Judith Valley, it opens into a broad plain. Towards the ancient Judith River-Cow Creek Divide it narrows once again. In this area, steep badlands have developed and the canyon sides rise to nearly 1,000 feet above the valley floor. Below the mouth of Cow Creek the valley becomes gradually more mature probably because it follows the ancient valley of Cow Creek.

In addition to different stages of river valley maturity, evidence of the glaciers can be found in the upper reaches of the management area in the form of glacial outwash deposits. Recent cutting by the river has exposed several cross sections of the material and surface exposures are common on the plains adjacent to the river valley.

Visual Resources

There are four visually distinct units within the 149 miles of river corridor addressed in this management plan. They consist of the Fort Benton-Virgelle Unit, the White Rocks Unit, the Badlands Unit and the Charles M. Russell National Wildlife Refuge Unit. Each of these areas has its own distinctive characteristics. The readily accessible Fort Benton-Virgelle Unit is considered the least scenic and supports the most manmade developments. The White Rocks Unit has a highly scenic character with unique and unusual eroded forms. The Badlands Unit is the least accessible, contains quality scenery and possesses some wilderness characteristics. The Charles M. Russell National Wildlife Refuge Unit is characterized by a broad river valley, planned land uses and possesses the finest wildlife habitat.

Fort Benton-Virgelle Unit (Mile 1 to Mile 51)

The characteristic landscape varies from rather level cultivated fields to gently rolling toe slopes to barren cliffs with sharply contrasting layers of tan and gray-green shale. Some of the cliffs are abruptly cut by numerous, deeply incised washes and coulees.

White Rocks Unit (Mile 51 to Mile 88)

This reach of the river is characterized by extraordinary and unusual erosive forces which have carved many hundreds of "grotesque figures" as Captain Lewis described the stone pinnacles and balancing rocks in 1805. Magnificent landforms tempt the imagination with some of the more notable ones named LaBarge Rock, Eagle Rock, Castle Rock, Grand Natural Wall, Citadel Rock and Hole-in-the-Wall.

Very few signs of man are visible within the seen area. A few abandoned homesteads, fences and corrals are the infrequently seen signs of man's intrusions into the area.

Towering white cliffs contrast sharply with scattered stands of cottonwood near the river's edge, limber and ponderosa pine and some Douglas-fir occur on the midslopes while juniper occupies the deeply incised coulees. In most areas, the floodplain is closely confined between the towering bluffs, while in some reaches, rounded sagebrush covered slopes gradually ascend to the steep cliffs. Dark igneous dikes penetrate the white eagle sandstone and can be seen as contrasting cross-fractured walls leading to the water's edge. Igneous stocks and plugs form unique land features and steep-walled canyons running at right angles to the Missouri River extend into the surrounding prairie.

Badlands Unit (Mile 88 - Mile 131)

The Badlands Unit is a rugged area of largely barren bluff and cliff-type landforms interspersed with occasional pillars, balancing rocks with scattered stands of conifer, grass, sagebrush and greasewood.

For the most part, the bottom lands are somewhat wider than in the White Rocks Unit although numerous towering bluffs descend directly to the river's edge in some locations.

Scattered stands of cottonwood trees provide shade for livestock and campsites for river floaters. Dense growths of sagebrush and greasewood are found on the more level to gently rolling toe slopes. In places, the sagebrush is 6 feet or more in height.

Judith sandstone and associated ponderosa pine growth at times caps the bluffs or penetrates the multilayered and deeply eroded slopes seen from the river. Fault lines and massive block slumping are commonly seen landform characteristics. White Eagle sandstone is thrust up near Iron City Islands and Sugar Loaf Rock. Thrust fracturing of sandstone is a predominant visual feature at Chimney Bend and Greasewood Bottom.

Charles M. Russell National Wildlife Refuge Unit (Mile 131 to Mile 149)

The topography in this area changes from the rugged badlands to a more open character with a wider floodplain and extensive bands of riparian vegetation on both riverbanks. Many more cottonwood trees and willows line the riverbanks and islands are covered with dense growths of underbrush.

RECREATION

In recent years, interest in river float trips as a recreational pursuit has surged nationally. On a growing number of rivers, the number of visitors has increased to the point that the very resource which has attracted recreationists, is beginning to deteriorate. This in turn, is lowering the quality of the recreational experience achieved.

For many years, the Upper Missouri River area has been popular for the hunting and fishing opportunities it provides. These activities were centered around the few existing access points and in the surrounding river breaks. Prior to the 1960s, the majority of recreational boating use on the river stemmed from interest created by local residents. Recreational use gradually increased as stories of what the river had to offer were spread by word of mouth. The Glasgow Chamber of Commerce was an early regular user when this group started an annual cruise in 1957. In 1960, a group of teachers from Fort Benton started making annual treks down the river at the end of each school year. Members of this group later formed the Upper Missouri Wilderness Waterway Cruise Company.

In 1963, the Departments of the Interior and Army released the Missouri River, Fort Peck to Fort Benton joint study. This study led to more river publicity and an increase in recreational use.

Through the 1960s and into the early 1970s, media exposure relating to the river was centered around discussions on reservoir construction or alternatives to such construction. River use increased gradually and some resources have suffered as a consequence of the unrestrained use.

Local residents who are familiar with the river area report that many homesteads have been vandalized. Ferry operators have noted homestead materials such as pot-bellied stoves, wagon wheels and other large items being taken downstream on recreational watercraft.

The archeological resource has also suffered from the actions of recreational floaters and the meanderings of the river itself. Cultural materials protruding from river cutbanks become obvious targets for those floaters who become adept at spotting such evidence. It will never be known how much of the total resource has suffered from natural and man-caused actions. Professional archeologists employed by the Bureau of Land Management engaged in reconnaissance surveys in 1975 and 1977, did note significant changes in some sites from both causes. Some natural values have deteriorated from the desire of some recreationists to record their presence in the form of graffiti on sandstone formations. Some delicate rock formations have also been destroyed by individuals rolling or tumbling rocks down steep canyon slopes.

The limited number of cottonwood groves located along the floodplain are focal points for much of the overnight camping use which is occurring. Some sites are more popular than others and a number of sites are showing signs of deteriorating quality. Numerous scattered firepits, garbage and human waste disposal are growing problems at some of the more popular undeveloped sites.

The lack of potable water over long stretches of the river creates some difficulty for use and is a management concern. Potable water can be obtained at Fort Benton, Coal Banks Landing State Campground, Judith Landing State Campground and Kipp State Park.

Primary launch points for visitors embarking on a Missouri River float trip are located at Fort Benton, near the Loma Ferry adjacent to the mouth of the Marias River, Coal Banks Landing State Campground, Judith Landing State Campground and Kipp State Park.

The Missouri River between Fort Benton and the Robinson Bridge is considered a family-type float stream. The Missouri's slow-moving currents and usually sunny days make it an ideal river for beginning canoeists.

The scenery along the river, especially in the "White Rocks" segment, is substantially different from the mountains and plains country of north-central Montana. Individuals accustomed to alpine meadows or deep forests find a special attraction in this unique area. The river also offers opportunities to view dynamic geologic processes and free-roaming wildlife.

The Missouri has gained a reputation as an easy float river, but there are some inherent dangers. Sudden gusts of strong wind may be encountered at unexpected times. Rattlesnakes can be found in the bisected canyonlands and sagebrush-covered river terraces. Cold, and sometimes heavy thundershowers are a frequent occurrence during the primary recreational use season. Temperatures exceeding 100° F can be expected in mid and late summer. A few inexperienced climbers have slipped and fallen from river bluffs, sometimes experiencing broken bones or bruises.

Visitor Use

In recent years, recreational use has changed from limited use by local hunters and fishermen to recreational boating and camping.

Statistical use samples were taken during the summers of 1975, 1976, 1977, 1981 and 1982 by BLM personnel. A sample taken between June 9-August 24, 1975, identified 5,553 floater days. Another sample taken between May 23 and September 5, 1976, identified 9,313 floater days (2,228 floaters). The 1975 figures were further expanded by trend analysis from the 1976 figures as only a portion of the use season was sampled in 1975. On the basis of the 1976 trend, 6,890 floater days and 1,648 floaters were projected for the 1975 season. The 1976 totals represented a 35% increase over 1975.

The average party size for the 2 years was 7.5 floaters and the average length of stay was 4.18 days.

During the summer of 1977, floater use was limited due to extremely low water levels. BLM personnel recorded use from May 26 to September 6 and tabulated 5,025 floater days or 1,289 floaters. The 1977 average party size was 4.5 floaters and the average length of stay was 3.9 days. This represented a 42% decrease from the previous season.

During the 1981 use season a total of 1,859 floaters spent 7,487 visitor days on the river. Bankside and overnight use added 5,535 visitors and 5,783 visitor days, for a total of 7,394 visitors spending 13,270 visitor days.

In 1982 1,944 visitors floated the river, 259 were there primarily for hunting and 7,282 visitors used the bankside and camping facilities. These figures total 9,485 visitors and 15,985 visitor days. The average party size was 5.6 persons staying for an average of 3.6 days.

WILDERNESS

The wilderness inventory has been completed in accordance with Section 603(a) of the Federal Land Policy and Management Act (FLPMA). No units identified as wilderness study areas will be involved with the proposed action and newly acquired lands cannot be considered in the future for wilderness designation (WO IM No. 82-440 referencing Solicitor Alexander H. Good's opinion of March 16, 1982).

SOCIAL AND ECONOMIC CONDITIONS

BLM is interested in acquiring lands in Blaine, Fergus and Chouteau Counties in north-central Montana. All three counties are sparsely settled with 1.6 persons per square mile in Blaine and Chouteau and 3.1 persons per square mile in Fergus Counties (the statewide figure is 5.1 persons per square mile). Lewistown, in Fergus County, is the only town in all three counties with a population greater than 2,000 inhabitants. Lewistown is a major trade and service center for central Montana and had a 1980 population of 7,104. The populations of Blaine and Fergus Counties grew approximately 4% during the years 1960 to 1970 while Chouteau decreased by 6%.

The acquisition areas would most likely be owned by area ranchers. The past few years have not been favorable for Montana farmers and ranchers; in 1981 wheat and cattle prices declined while the costs of production increased. The outlook for 1982 is not encouraging and these conditions would affect the ranchers' desires to sell lands.

The existing character of the tracts under consideration for acquisition (Blaine, Chouteau and Fergus Counties) can be described as economically undeveloped. These lands, at present, do not support any significant level of regional or local economic activity when measured in terms of employment, earnings or production. Because of the relatively small total acreage and the undeveloped nature of these tracts, they constitute an insignificant portion of the study area's property tax base.

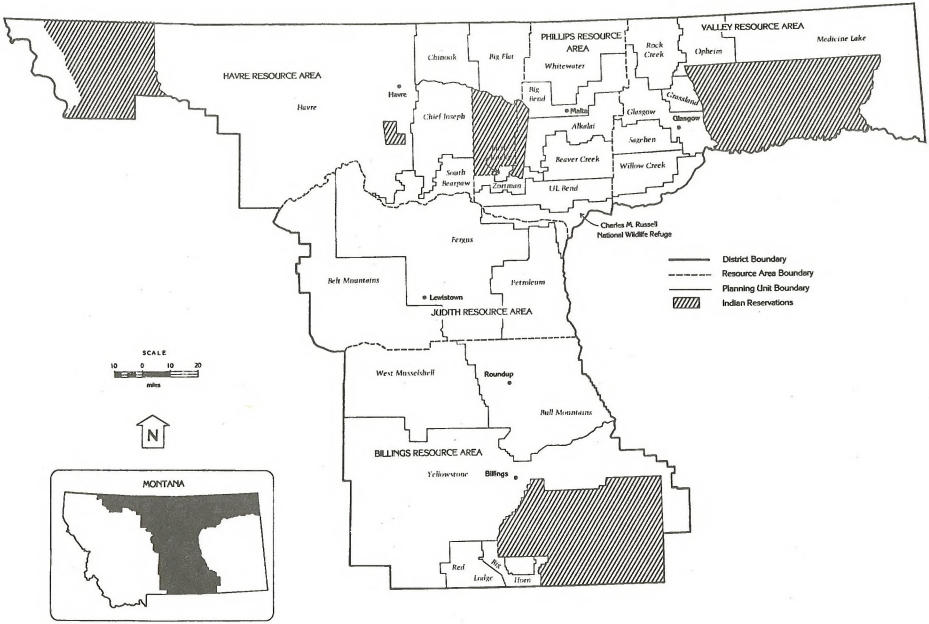
"B" - ISOLATED TRACTS OF LAND (DISPOSAL LANDS)

This section describes the physical, biological and social and economic features in the Lewistown District by environmental component (Figure 3.5). Exchange would most likely occur with lands in counties adjacent to the Missouri River, but any lands within the district could be considered for exchange possibilities. Particular emphasis has been placed on resources which would experience impacts from the BLM giving up management responsibilities of these lands.

If the reader is interested in more detailed information concerning these environmental components, he is encouraged to look at other planning documents of the district located in either the Lewistown District Office or one of the five resource area offices.

CLIMATE AND AIR QUALITY

The climate of the Lewistown District is typically midcontinental, ranging from semi-arid in the plains and intermountain basins to sub-humid in the



SOURCE: BLM 1981

Figure 3.5: Location Map, Lewistown District

mountains. The semi-arid areas have moderately low rainfall, great extremes in summer and winter temperatures, many sunny days and relatively low humidity. Midsummer temperatures are not oppressive because of the low humidity levels, and the harshness of winter is often tempered by warm winds.

Mountains exhibit more uniform temperatures, greater rainfall and a greater number of cloudy days than the plains. Rainfall normally increases and temperatures decrease in higher elevations. To some extent, mountain ranges and larger canyons influence air drainage and the paths of local storms; consequently, some areas are more subject to hail and frosts (both early and late) than others.

The average annual temperatures vary with elevation. Temperatures in the high mountain basins are about 6° lower than those recorded on the plains. January is the coldest and July the warmest month with minimum and maximum temperatures of -60° and 110°, respectively, representing a range of 170°.

Precipitation usually ranges anywhere from 12-16 inches yearly, with the highest precipitation occurring in the higher elevations. Isolated mountain ranges in the western part of the area have their own peculiar climates, depending on their elevation and exposure. Local showers are characteristic of much of the summer rainfall on both mountain and prairie areas; some areas may receive good rains and others a few miles away may receive none. The lowest average precipitation in the district is 6 inches occurring along the Montana-Wyoming border.

Air quality is basically very high throughout the district. Except near the city of Billings, degradation occurs usually only on a local, short-term basis from construction, burning of grain stubble or logging slash, other agricultural activities or from natural causes such as range or forest fires. Areas near Billings, if in the pattern of air flow, receive the greatest influence from air pollution due to oil refineries, sugar beet processing, power generation and vehicular exhaust. Most of this pollution, however, is largely dissipated outside the periphery of the city.

GEOLOGY AND TOPOGRAPHY

Comprising all of central and part of eastern Montana, the geologic formations of the Lewistown District are largely sedimentary rocks. The bedrock strata are horizontal, or nearly so, over most of the area. In certain areas, though, the beds have been sharply tilted by uplifts which form the dome-type isolated mountain ranges typical of the border region between the Rockies and the plains. These ranges are the Pryor, Big Snowy, Highwood, Little Belt, Judith, Moccasin, Little Rocky and Bears Paw Mountains and the Sweet Grass Hills. The youngest beds on the surface are exposed in areas away from these mountains while outcrops in mountain areas commonly comprise deep-seated beds where erosion has removed the younger rock caps. In the lower 5,000 feet of sedimentary rocks are the Cambrian, Devonian and the Mississippian strata, composed mostly of limestone. Beds become sandy and shaley towards the middle of the Pennsylvanian sections. The uppermost 6,000 feet consists of interbedded shale and sandstone of Jurassic, Cretaceous and Tertiary age.

Igneous volcanic and intrusive rock form the central core of many of the isolated domes in central and north central Montana.

Most of the bedrock in the district is covered by unconsolidated rocks, including glacial moraine and outwash, terrace gravels and recent stream-deposited alluvium. The glacial drift deposits and the sand and gravel deposits of glacial outwash are in the areas once glaciated. Terrace gravels are the alluvial deposits of former river systems from mountains in central and western Montana during preglacial times. Recent sand and gravel deposited by present streams are found along all drainageways.

A generalized geologic section of sedimentary formations and their descriptions and thicknesses is contained in Appendix 4-1. Appendix 4-2 shows a cross section of a portion of central Montana.

The Lewistown District is situated on the extreme western part of the Great Plains but it has three distinct physiological regions; the plains, the river breaks and the mountains. The plains are the largest region. They are almost level to steeply rolling with small ridges. Slopes range from 1%-30%. Elevations range from 4,800 feet near the beginning of the Snowy Mountains to 2,800 feet at the beginning of the Missouri River Breaks.

The breaks are the second-largest region. They are an area of sharply incised coulees which divide low ridges. Slopes range from less than 5% on ridgetops and in coulee bottoms to 90% on side slopes. Elevations range from 3,800 feet on ridgetops in the Arrow Creek area to 2,176 feet at the high water mark of Fort Peck Reservoir.

Most of the large mountain ranges are administered by the U.S. Forest Service. Therefore, only the foothills, which contain BLM land, will be considered in this EA. Elevations range from 4,000 feet at the base of the Moccasins to 6,428 at the summit of Judith Peak in the Judith Mountains. Slopes range from almost level to in excess of 100%, averaging 50% or more.

MINERALS

Most minerals activity which would occur on exchange types of lands would be oil and gas activity.

The first oil and natural gas wells were located on the basis of surface expression of subsurface features. Notable fields were discovered by surface structures that include the Sweet Grass Arch, Cedar Creek Anticline, Poplar Dome and Elk Basin. With the development of reflection seismography in the 1940s, the production of petroleum exploded, many new fields being opened since that time.

Petroleum occurs in 21 geologic formations, ranging in age from late Ordovician (Red River formation) to the upper Cretaceous (Judith River formation). Natural gas is found in 18 geologic formations from the Stony Mountain formation of late Ordovician age to the Cody Shale of the upper Cretaceous. Most oil and natural gas production is from Cretaceous formations.

SOILS

The soils of the area differ greatly in character and productivity, largely because of their physical, chemical and biological properties, and because

they occur in different climatic zones. This discussion of soils is general in nature, being confined to broad, general soil subgroups that dominate the area.

Soils here run from shallow, immature, heavy clay soils of low productivity in the Missouri and Musselshell Breaks to the deep, fertile and highly productive soils of the mountain meadows. Lands are mostly privately owned in the vicinity of the mountains and river bottoms, while public lands are found mostly in the breaks and prairie areas.

Adjacent to the mountains are found the alluvium soils, deep and medium textured, underlain by rounded gravel outwash. These soils grade from silty clay loam to a sandy loam. They are underlain by limestone gravel at varying depths up to 80 feet. When topography allows, alluvium and terrace soils are cultivated; the remainder is privately owned grazing land.

The breaks soils are characterized as thin, immature soils without definite horizons, retaining the platy structure of the parent shales. The poor soils and rugged topography of the breaks are the primary reasons the area is mostly public domain land. The breaks soils have developed over both the noncalcareous shales such as the Bearpaw, Claggett and Colorado, and calcareous sandstone and shale formations such as the Fort Union, Hell Creek, Fox Hills, Judith River and Eagle formations. Soils from noncalcareous shales vary from raw, immature, heavy clays with little or no structure to a clay loam with moderate structure.

The soils developed over calcareous sandstone vary from a silt loam to a medium sandy loam, with a top layer of 4-5 inches. These are frequently underlain with a silty clay loam. Calcareous soils are found in the broken sandstone escarpment areas of the central and eastern part of the district, adjacent to the mountains and in the areas north of Roundup.

Lighter and slightly better developed soils are found in the prairie areas between the breaks and the mountain foothills. These soils are marginal in productivity and are relatively immature, shallow soils with poor structure and a low humus content. These soils have been cultivated in the past but, because of their low productivity, were abandoned as cropland. Cultivation destroyed what little structure the soils had, and they were very susceptible to wind and water erosion until revegetated.

WATER

The area lies within the Missouri Water Resource Region. Included in the region are the Upper Missouri and the Milk River Basins. All surface water drains into the Missouri River. The major rivers of the area are the Yellowstone, Missouri, Milk, Marias, Judith and Musselshell.

Streamflow depends largely on the amount of annual precipitation during the winter and spring months. Runoff from melting snow begins as early as March in the low elevations (April in the mountains) and is essentially over by July. Perennial streams continue to flow through the summer and may be swelled slightly by summer rains. As fall rains begin, another increase in flow occurs before the runoff freezes in the cold weather.

Mountain streams generally maintain flows throughout the year with their lowest flows coming in late winter. Streams of the plains and foothills are usually extremely low or dry in late winter and summer months. These streams rise to a peak flow rate during the spring because of the runoff from melting snow and rain. Their flows fall rapidly after the peak and any later increases are dependent on rains.

Streams generally carry good to excellent quality water in mountainous areas but water quality declines as the streams flow onto the lower plains. The higher quality streams are located in the central area where they carry low dissolved solids of calcium bicarbonate. Lower quality streams in the plains and foothills generally carry sodium sulfate and sodium bicarbonate solids.

The sediment yield of streams in the district varies with the geology, relief and vegetation in the watershed and the quantity of streamflow. Consequently, streams on the sedimentary plains which run over shales and soft sandstones produce large quantities of sediment.

An area of high plains broken by mountain ranges extends through the central part of the area. This area is underlain by water-bearing sandstone and limestone formations that outcrop in mountainous areas. Here they are recharged from precipitation and streams flowing over them. The local geologic structure is such that the buried water-bearing formations away from the mountains are often favorable zones for flowing artesian wells.

Most of the remaining area is a high plain, deeply incised by the Missouri and its tributaries. The Fort Union formation and terrace gravels of Cenozoic age contain groundwater. These formations are underlain by aquifers in the Fox Hills, Judith River, Eagle and Kootenai formations of Mesozoic age.

Alluvial deposits along principal drainageways which are composed of silt, sand, gravel and cobbles are the most permeable aquifers in the area.

There is a general correlation between the quality of surface water and groundwater, reflecting the interconnection of these systems. Because of the intimate interaction with the rock, groundwater tends to be slightly poorer in chemical quality than surface water. Water in consolidated sedimentary rocks of Cenozoic and Mesozoic age also tends to be poorer in chemical quality than waters in alluvial deposits.

VEGETATION

Numerous scattered tracts of public exchange lands lie within the boundaries of the Lewistown District. The vegetation complex of these parcels can best be characterized as part of the mixed grass prairie biome. A few disposal parcels lie within the Rocky Mountain coniferous forest. Numerous vegetation subdivisions exist in each classification, defined by soil, aspect, climate, elevation and even past land uses. Detailed descriptions of all of these vegetational types as well as species listings and scientific nomenclature of plants mentioned in this document are available in the Lewistown District Office and the five resource area offices.

Vegetation of the prairies falls into three broad categories: grasslands, shrub grassland (usually sagebrush) and conifer parkland common to the

Missouri Breaks. Each of these categories is a mosaic of vegetational communities based on species dominance.

The shrub-grassland type is most common on public lands. Big sagebrush and western or thickspike wheatgrass is the dominant association in most cases.

Grassland and shrub grasslands differ mainly in that a greater number of forbs are common to the former. The most common shrub or half-shrub in the grassland category is fringed sagewort, a primary indicator of declining range conditions.

The conifer-parkland vegetation type has survived in isolated locations on the Marias River and is common in the breaks along the Missouri. These low elevation timber types almost always have an overstory of ponderosa pine sometimes interspersed with Rocky Mountain juniper and Douglas-fir. In some cases, the juniper will produce pure stands. When the overstory is dense, little undergrowth occurs. Seldom is the overstory excessive in the land exchange area.

The normally intermittent or broken overstory may be underlain by a variety of grasses, forbs and shrubs. These include wheatgrasses, with particular reference to bluebunch wheatgrass, some muhlenbergia, the brome grasses and, in some cases, little bluestem. Frequently found forb species are yarrow, Oregon grape, aster, thistle and many others. Shrubs may include skunkbrush, sumac, rose, snowberry, etc.

Riparian zones are also common throughout the exchange area. They can support a variety of vegetal types varying from sparse, low growing vegetation at high elevation headwaters to large areas of dense, complex vegetation around the lower reaches of major streams and rivers.

Introduced vegetation is essentially limited to plant forms common to farming operations. Much of the softly rolling prairie land within the land exchange area is planted to grain. The greatest concentration of cultivated crops being in the northern tier of the area with a gradual transition to rangeland occurring to the southeast. Additional seedings are made for hay and pasture crops and thousands of acres of farmland acquired by the government in the 1930s under the Bankhead-Jones Act were seeded to crested wheatgrass in the post-depression years.

Poisonous and/or noxious weed infestations are not a major problem on the exchange area although they often are a source of concern and significant expense in localized zones. Leafy spurge and halogeton are the most troublesome species, mainly because of the difficulty in achieving eradication. Noxious plants are often found in scattered patches along roadways and trails, in disturbed locations or along water courses or ditches. Plants in this category are field bindweed, cocklebur, broom snakeweed and various species of thistle. Poisonous plant types are larkspur, lupine, deathcamas, milkweed and the poison vetches. Greasewood is also a poisonous species that poses no real problem unless grazed in large amounts.

Aquatic vegetation is found in many potholes, shallow ponds, reservoirs and waterfowl habitat sites within the disposal area. These plants follow a successional pattern. Annual weeds and mosses appear in wet areas followed by

emergent and submergent plant forms. Emergent aquatics tend to disappear if high water conditions persist over a number of years. Under normal conditions, however, they can fill and choke out potholes over a period of years although the short growing season generally prevents this from becoming a significant problem.

Common emergent species are spike sedges, bulrushes, broad-leafed cattails, arrowleaf, waterplantains and smartweed. Major submergents include pondweed, American milfoil, aquatic buttercup and western waterweed.

Various algae and mosses are also common to these wet environments and barnyard grass and foxtail barley often line the shoreline in dense stands.

Only two threatened or endangered plants are known to occur in the exchange area, a buckwheat spp., Eriogonum lagopus and a watercress spp., Rorippa calycina.

FORESTRY

The southwestern quarter of the exchange area extends into the foothills of the Rocky Mountains. The Rocky Mountain Coniferous Forest vegetation type appears both here and in other locations such as the Snowy Mountains and the Highwood Range. These sites are higher than the conifer-parkland biome and produce additional, more distinct vegetational systems defined by altitude changes. Conifer types include ponderosa pine at lower elevations, changing successively to Douglas-fir, Engleman spruce and subalpine fir as elevation increases. Lodgepole pine stands combined with shrub communities intersperse throughout the Douglas-fir and spruce-fir zones. White bark and limber pine occur on dry ridges and slopes and aspen groves appear in swales or low spots where increased moisture is available.

Little surface vegetation exists where the overstory is dense. Thin-leaved huckleberry and kinnikinnick are common understory shrub types and elk sedge is usually the most plentiful grasslike plant. When the overstory is broken, a variety of grasses and forbs appear. These include wheatgrasses, bromes and inland fescue. Forb species often found in the community are heartleaf arnica, yarrow, clovers, asters and others.

The present-day forest industry is somewhat confined by poor timber quality and the limited geographical size of the few small mountain ranges containing the forest management and harvest activities within the exchange area.

Forest based enterprises within the exchange area are producing posts, poles, mine timber and saw timber for railroad ties. Demand for ties and the inch plus diameter tree required for their production is currently the backbone of the local industry and the Snowy Mountains are the center of operation.

Wood quality in the montane areas is wholly adequate for the production of wood pulp and partical board. The manufacturing processes are essentially volume-based and thus are ideally suited to the present untended, dense stands. Unfortunately, the potential is there but, thus far, demand does not exist.

GRAZING BY LIVESTOCK

All except a very few of the lands considered for disposal are under either a grazing Section 3 permit or Section 15 lease. The major portion of these were selected from less intensively managed allotments.

Many of the smaller custodial land parcels are grazed at the discretion of the allottee with the stipulation that use may continue as long as no damage to the public land or resource occurs. Those parcels with Section 3 permits have approximately 30% of the annual forage production allocated to livestock within the mountainous or river break areas. Forty percent of the annual forage production is allocated to livestock if confined to the more gently sloped high or rolling plain rangelands (Missouri River Breaks and Prairie Potholes Grazing EISs). These generalized utilization levels will continue to guide allocation of future forage increases except in sensitive areas identified in individual management plans.

Some of the exchange lands in intensively managed parts of the exchange area may be included under an allotment management plan. These tracts would be selected because of their limited size, unaccessible location or some other factor making them difficult to manage and of greater usefulness under private ownership.

These less intensively managed exchange lands are usually small, scattered tracts interspersed with larger, privately-owned areas receiving only enough supervision to ensure compliance with grazing regulations and to permit periodic evaluation of range and resource conditions. No range improvements are planned and the only management objectives imposed are those of maintenance and/or possible improvement of resource condition. Thus these lands also may be more productive if under private ownership.

Some of the public land that may be selected for exchange is not allocated because it is either unsuited for livestock use or inaccessible. Non-allocated lands are grazed occasionally on a one time, non-renewable basis whenever adequate forage is available. For the most part, however, unallotted land is difficult and costly to manage and supervision is essentially limited to trespass control and periodic inspection.

Utilization patterns on the exchange area rangelands have evolved slowly and a well defined interdependence exists between public and privately-owned lands.

Private lands customarily provide the hay base needed to sustain livestock through the winter. A large percentage of privately-owned agricultural land holdings are dependent upon either public or state lease lands to complete an economic unit and sustain a year-round grazing operation.

Cultivation of lands managed by the Bureau of Land Management is seldom feasible, thus, use is almost entirely for grazing, wildlife habitat, recreation or other uses compatible with multiple resource management. The range resource on public land is, therefore, similarly dependent upon the capability of private lands to sustain feeding or grazing livestock through winter and early spring or until forage plants on public domain are ready for use.

WILDLIFE

Wildlife habitats, including vegetation types such as grassland, grassland-shrub, shrub, woodland, riparian and agricultural lands, and special habitat features, such as natural potholes, reservoirs, cliffs, snags, springs and streamside and reservoir riparian zones, fulfill the needs of a wide variety of wildlife species.

Most wildlife in the area use riparian and woodland habitats much more than other types (Thomas, et al., 1976). The diversity offered by tree, shrub and herb layers provide nesting, roosting, hiding, escape and thermal cover for large, varied wildlife populations (BLM, Nongame Studies, 1980). Riparian vegetation also provides many important food plants to wildlife. Plants in riparian zones remain green and nutritious longer than the surrounding upland vegetation because they receive more moisture from their proximity to stream courses, lakes, reservoirs and springs.

Drainage bottoms with brushy side slopes maintain deer and sharp-tailed grouse populations. Some of the most important winter habitat for antelope and sage grouse occur on the broader drainage bottoms where sagebrush flourishes. Waterfowl production in the area is primarily dependent on potholes and reservoirs. Predators and raptors are also attracted to these areas because of the greater numbers of prey.

The riparian zone is also a crucial part of the aquatic habitat on streams (Duff, 1977, Platts, 1978, Mechan and Platts, 1978, Armour, 1978 and others).

Species listings including scientific names of animals commonly occurring in the Lewistown District are available in the district office and resource area offices. Not all of these species are discussed in this section. Emphasis has been placed on those species which have the most public interest, are important to the economy and may be affected from BLM exchanging lands that contain their habitat. Those most likely to be affected are deer, antelope, upland grouse, ring-necked pheasant, Hungarian partridge and terrestrial nongame.

BIG GAME

Deer

Deer are the most abundant big game animals in the area. Mule deer inhabit drainage bottoms and the rough, broken, side slopes of these drainages as well as some upland areas where sagebrush is common. White-tailed deer also prefer drainage bottoms, especially those with tall brushy vegetation, often near private croplands. The large grassland areas that lie between drainages are of less value to deer than any other habitat type. This discussion applies to both species because of their close association in major drainages in the area.

Cover is important in maintaining deer populations. Without sufficient cover, fawns are easily susceptible to predators and bad weather. Woody vegetation is important in reducing the effects of weather, especially during severe spring and winter storms. Deer also use the woody vegetation for bedding cover during the heat of the day and at night.

Although the highest densities of deer are found along drainages and areas of rough topography in the winter, they tend to be distributed over the entire area during the summer months. Grassland, grassland-shrub and agricultural vegetation types provide them with succulent small grains and forbs. Cover requirements are not so crucial during the warmer months.

Deer in the area are nonmigratory; however, they concentrate more in the winter moving to the warmer south and southwestern open slopes of major drainages. In severe winters deer congregate on private agricultural lands and can cause severe haystack damage. Important vegetation providing cover and forage include grassland-shrub, shrub, woodland and riparian types.

Antelope

Pronghorn antelope are the next most numerous big game animal.

Antelope use a variety of vegetation types in the area throughout the year. Grassland, grassland-shrub, shrub and agricultural types are used in the spring, summer and early fall while antelope concentrate on grassland-shrub and shrub types during the winter.

Browse is vital in the antelope diet; sagebrush constitutes a very large part of their yearlong diet. Winter diet usually consists of at least 80% sagebrush. In the spring, succulent green grasses are used for 1-2 weeks before forbs are available. Also important in the spring, summer and early fall are seasonal forbs. These plants are commonly found in the grassland, grassland-shrub and agricultural vegetation types.

Crucial winter habitat includes sagebrush and shrubs between 12-24 inches in height, especially when snow covers the shorter sagebrush plants. Vegetation cover is also necessary for fawning as it protects the young from predators and severe winters. Sagebrush 12-24 inches in height with 20% canopy cover meets this particular need of antelope.

Elk

Elk are most often associated with timber habitats. In this district, they can be found in the Missouri Breaks, Sweet Grass Hills, Little Snowies, Bull, Pryor, Judith and Bears Paw Mountains. Much of the breaks elk habitat is under the jurisdiction of the U.S. Fish and Wildlife Service. Populations which occupy lands managed by the U. S. Forest Service are found in the Little Belt and Big and Little Snowy Mountains.

Bighorn Sheep

Typical Rocky Mountain bighorn sheep habitat consists of rocky ledges and walls for escape cover, interspersed with open grassy slopes. Three transplants of bighorn sheep have been made in the Missouri Breaks, as discussed previously in the first section of this chapter. Bighorn sheep have also been transplanted in the Pryor Mountains. Transplants of 79 animals in 1971 and 1974 have yielded a population of 10-20 animals. A small, relatively healthy population exists in the Little Rocky Mountains.

Goat

Rocky Mountain goats inhabit broken, rugged mountainous terrain. They occur in the Big Snowy Mountains and Square Butte. Those inhabitating the Snowies are on lands managed by the U.S. Forest Service.

Bear

Black bears are present in a few isolated mountain areas east of the Continental Divide, including the Little Belt, Big and Little Snowy and Pryor Mountains. They occur in a variety of forest habitats.

GAME BIRDS

Eight species of game birds are found in the Lewistown District; two species of upland grouse, two species of mountain grouse and four introduced species.

Sharp-tailed Grouse

Sharp-tailed grouse are the most important upland game birds in the area. They are widely distributed through the grassland, grassland-shrub and woodland vegetation types. Populations often fluctuate due to weather conditions.

Yearlong residual cover is very important for the sharp-tailed grouse. Females nest and raise their broods in the grassy uplands usually within 1 mile of mating grounds. All nests are found within 2 miles of the mating ground (Yde, 1977; and Neilsen, 1978). Brood rearing takes place in the same grassland area as nesting and, as long as cover is sufficient, the grouse will stay in the grassy uplands. If cover is not available, shrubby draws in the woodlands or shrubs on the uplands associated with the grassland-shrub type are used to rear the brood.

During the fall the hen and her brood use shrubs in the woody vegetation type for nesting during the heat of the day. They also feed in or close to shrubs during this period.

Buffaloberry, snowberry, juniper and wild rose in the woodlands are used extensively for food and cover by grouse during the winter. If snow is not available for burrowing during severe winter weather, shrubby vegetation must be available to protect the grouse population from heavy winter kills. Studies show that grouse may move some distance to find these shrubs (Neilsen, 1978).

Other important plant species used by sharp-tailed grouse are alfalfa, clover, common chokecherry, common dandelion, pussytoes, rose, serviceberry and silver buffaloberry (Marshall, et al., 1937; Martin, et al., 1951; and Neilsen, 1978). Important feeding areas consist of grassland, grassland-shrub, riparian, woodland and agricultural types.

Sage Grouse

Sage grouse are the next most important game birds in the area. They are primarily associated with the big and silver sagebrush communities in grassland-shrub and shrub vegetation types. Populations seem to be

decreasing because of the continual reduction in habitat principally due to expanding agriculture (Montana Department of Fish, Wildlife and Parks, 1979).

Nesting habitat is located under sagebrush, usually within 2 miles of mating grounds (Wallestad and Pyrah, 1974; Martin, 1970; and Gill, 1965). The tallest and most robust sagebrush in the stand are normally used, ranging from 6.6-31.6 inches with canopy cover between 20-50% (Wallestad and Schladweiler, 1974; Wallestad and Pyrah, 1974).

Sage grouse prefer sagebrush for cover and food with a canopy cover greater than 15%. Sagebrush provides 80-100% of the sage grouse's winter diet. If snow covers low shrubs, sage grouse move to areas where shrubs are above the snow. Eng and Schladweiler (1972) and Wallestad (1975) reported that these winter areas usually contain shrubs at least 12 inches tall within 2 miles of mating grounds. When this habitat is not available, sage grouse will move to areas where sufficient habitat exists.

Mountain Grouse

Blue and ruffed grouse are forest grouse species found in the district. Blue grouse are usually associated with Douglas-fir. Ruffed grouse inhabit denser cover of mixed conifer and deciduous trees and brush, and are often found along stream bottoms.

Introduced Game Birds

Exotic game birds are the ring-necked pheasant, Hungarian partridge and chukar partridge. Although native to North America, the wild turkey was probably not present in Montana but has been successfully introduced here.

Public lands in the area provide acres of ring-necked pheasant habitat. Pheasants prefer areas with grain crops and weeds for food, and brush and trees (woodland and riparian) for cover (Janson, et al., 1971). Cattail and bulrush in wetlands also provide additional escape and winter cover for pheasants.

In the spring and summer green grasses and forbs provide food for the adult birds. Chicks eat insects during their first 4-6 weeks and then switch to vegetation. Small grains and weed seeds are used during the fall and winter.

Hungarian partridge also require a mixture of cultivated and uncultivated land, but make more extensive use of grasslands than pheasants. Public lands provide some important "Hun" habitat.

Chukar partridge are not numerous in Montana. The largest populations in the Lewistown District are found south of Billings. The habitat they prefer is semi-arid areas with steep, rocky topography and an abundance of cheatgrass.

Suitable wild turkey habitat consists of ponderosa pine forests in rugged terrain. Small openings, deciduous trees and brush and drainages add to

the quality of the habitat. Turkeys are found in a number of places in the district including the Bull, Big and Little Snowy, Judith and Moccasin Mountains as well as the Missouri Breaks.

Waterfowl

The northern half of the Lewistown District is part of the best breeding area of waterfowl in North America, the Prairie Potholes Region. Approximately 20 species of ducks, as well as a substantial population of Canada geese nest here. However, waterfowl habitat has seriously declined through drainage, farming and urbanization throughout this breeding range. Small stock water reservoirs constructed by BLM, some with nesting islands, have somewhat compensated for this habitat loss. In addition to its importance as a waterfowl breeding area, the district serves as an important wintering area for large numbers of mallards. They use spring-fed streams, warm water drains and large rivers with open water.

FURBEARERS AND PREDATORS

Mink, beaver and muskrat are the principal furbearers harvested in the Lewistown District. All three are associated with water habitat. Mink are carnivorous, the other two being vegetarians.

Predators that inhabit public lands in the district are the coyote, fox, weasel, badger, skunk, bobcat and raccoon. Coyotes have the largest population among predators, and have become economically important because of the value of their fur. Other more scarce predators that may be present on public lands are the cougar, wolf and black-footed ferret. The latter two are threatened and endangered species.

NONGAME ANIMALS

Nongame animals include small mammals, nongame birds, reptiles, amphibians and invertebrates.

Small mammals include the jackrabbit, cottontail rabbit, prairie dog, ground squirrel and many smaller rodents. Probably the most numerous rodent in almost all vegetation types would be the western deer mouse.

A variety of hawks, owls, falcons and eagles are present in the district. Complete species listings of raptors which occur in the Lewistown District are available for review in the district office.

Numerous nongame birds occupy various habitats on public land. Some confine themselves to prairie habitats and others to forested habitats. Many will inhabit both types of habitats. The greatest concentrations of nongame birds are found in riparian areas. Almost all are seasonal and leave the area during the winter.

Reptiles are found in most vegetation types while amphibians are associated with aquatic environments. Reptiles found in the district include the prairie rattlesnake, bull snake and plains garter snake. Amphibians include toads, frogs, turtles and the tiger salamander.

Invertebrates, especially insects, are found in many varieties and in large abundance in the summer months but are generally fewer in the winter. Mullusks, snails, worms and aquatic insects are important in the food chain and are a major food source for fish, birds, reptiles and amphibians.

FISH

Fisheries habitat in the district varies from the clear mountain streams and spring-fed creeks to turbid rivers and warm water reservoirs. Thus, the fish species present are varied.

There are sport fisheries for both cold water and warm water species. The cold water species are of the trout family, principally rainbow and brook trout. Rainbows have been successfully introduced in many reservoirs built by BLM while scattered, residual populations of native cutthroat trout have also been found in the district. Brown trout are plentiful in the lower extremities of the cold water fisheries. Mountain whitefish are also present in some of these waters.

Warm water species, some of which have been introduced in stock water reservoirs on public lands, include largemouth bass, northern pike, walleye, sauger and yellow perch. Rough fish, found principally in major rivers, and include big mouth buffalo, drum carp and goldeye. Other river species are channel catfish, pallid and shovelnose sturgeon.

The paddlefish spawns in both the Missouri and Yellowstone Rivers. It is of considerable interest for fishermen.

THREATENED AND ENDANGERED SPECIES

Endangered wildlife species include the peregrine falcon, bald eagle, whooping crane, gray wolf, northern swift fox and the black-footed ferret.

The peregrine falcon and the bald eagle have nested throughout the district in the past, but no active aeries are known to exist today. Only a few sightings of the peregrine falcon are reported in Montana each year. The bald eagle, a recent addition to the threatened and endangered list, winters here, and large numbers concentrate along major river systems and large water bodies during early spring. The whooping crane migrates through the northeastern corner of the district in the vicinity of the Medicine Lake National Wildlife Refuge. The gray wolf can be found as an incidental transient. Several recent sightings have been reported in the Pryor Mountain range. Potential habitat for the northern swift fox exists in the prairie-grassland areas throughout the district. The black-footed ferret has not been observed on public lands in the district for years but there are numerous prairie dog towns here; possible habitat for the ferret and areas where populations could be introduced.

CULTURAL RESOURCES

Prehistoric

There is prehistoric evidence of man's occupation of most of the exchange lands through all of prehistory, although the evidence is scattered and the density of sites is variable. The Lewistown District files summarize the

number and types of sites assignable to each prehistoric culture period. Because the artifacts identified or collected from the surface often are not sufficient proof of a culture period many sites cannot be labeled with a culture period affiliation. If these sites were excavated to recover subsurface materials, many would definitely be tied to one of the three culture periods discussed below.

Prehistory includes three general culture periods: Paleo-Indian (10,000-5500 B.C.), Plains Archaic (5500 B.C.-A.D. 500), and Late Prehistoric (A.D. 500-A.D. 1800). During all three periods, living on the Northwestern Plains involved hunting game and collecting wild plant foods. Because of this, the groups of people were quite small, had no permanent settlements, and possessed only a limited toolkit composed principally of stone, wood and bone objects. Most prehistoric sites in the plains are small and contain only limited numbers of artifacts and faunal or vegetal materials used as food because of these factors. Older sites are more likely to have been destroyed by erosion and other elements, making sites from the Paleo-Indian Period the most rare in the region while sites from the later periods are the most common.

Prehistoric site types in the district are classified according to their uses or functions which are determined from the features, artifacts and other cultural debris present. The functional types are: habitation, procurement, industrial and ritual. Habitation sites consist of cultural features and material which indicate everyday domestic activities such as manufacturing clothing, tools and ornaments, preparing food and medicine, cooking and securing warmth and shelter. Camp debris scatters, hearths, cairns and tipi rings comprise the features and material of habitation sites. Procurement sites consist of features representing specific activities for subsistence such as hunting bison, deer or antelope and gathering wild plants. Buffalo jumps, traps or pounds and associated processing areas are the most typical procurement sites in the region. Industrial sites are made up of scatters of lithic waste debris, hammer stones, rough or damaged tools and chunks of workable fine-grained rocks. Quarries and workshops located around source materials are the common industrial sites. Ritual or ceremonial sites in the district may consist of petroglyphs, pictographs, burials, medicine wheels and rock or wooden structures which might have been used as war lodges, shaman quarters or vision quest features.

Cultural resource inventories in the general area of the exchange lands have found prehistoric features of varying significance. The significance of a site is generally measured by the information the site provides to the knowledge of prehistoric life in the area and what caused that pattern to change through time. Another factor in establishing the significance of a site is by the potential the feature may have for public enjoyment and education. Most of the sites recorded in the area have not been investigated thoroughly enough to establish their relative significance. The scarce site types, such as animal kill and butchering sites, burials, rock shelters, pottery sites and some lithic scatters should be considered highly significant because of their obvious potential to yield cultural information. Although the majority of lithic scatters and tipi rings are more common, they too may contain information important to interpreting prehistory. The proper evaluation of most of these sites can be made only after they are better understood through improved archaeological methods and testing for subsurface cultural deposits. None of the prehistoric properties recorded have been completely studied for their public enjoyment and education potential.

Historic

The earliest recorded historical events in the area were explorations by Europeans or Americans at the end of the 18th and beginning of the 19th centuries. Presently, records do not show that either British or French explorers entered the area, but the Lewis and Clark expedition of 1804-1806 traveled along the Missouri and Yellowstone Rivers and camped several times in the district. Coming up the Missouri River in 1805, the Lewis and Clark party camped at several times here and Captain Lewis' contingent passed through the same area on the return trip in August 1806. The Yellowstone River Valley was the scene of a few campsites from Clark's 1806 return trek.

Organized fur traders followed the Lewis and Clark Expedition to the Yellowstone and Upper Missouri country. Most of the activities from this trade in the district were confined to a narrow corridor along the two major rivers between 1820-1860. Trading posts or forts in the district were built on the Missouri and Yellowstone Rivers, but the locations of most of the posts are only vaguely known. Future surveys may locate cultural resources related to the sites.

By the 1860s the fur trade was declining, but there was a great demand for transportation to the gold fields in western Montana. Steamboats met some of this demand. The first steamboat reached Fort Benton in 1860, and the head of navigation on the Missouri became a staging location for the travel of people and the shipping of goods to and from the gold fields. The use of the Missouri as a major transportation route brought more people into certain areas along the river downstream from Fort Benton. These include steamboat landings, discharge points for passengers and freight during low water and woodhawkers' locations, where fuel was provided to the passing steamboats.

Gold seekers and the people that lived from them came into greater conflict with the native American Indian population as the push west continued. The period from the discovery of gold in Montana to the late 1880s saw military actions in Montana, and left historic features in the area. These include camps, posts, forts and battle sites. The three major conflicts with Indians were the Blackfeet War of 1869-70; the attempted Nez Perce flight to Canada under the leadership of Chief Joseph (1877); and the war with the Sioux (the Battle of the Little Bighorn, the Battle of the Rosebud, and several other sites of skirmishes are all in the study area).

In the late 1880s, the Great Northern and Northern Pacific Railroads were built through Montana. Between 1900-1925, the Great Northern and the Chicago, Milwaukee, St. Paul and Pacific (the "Milwaukee Road") built rail lines into the area. Abandoned tracks and the remains of structures and construction camps can still be found in the area.

The region was settled very slowly and remains sparsely populated even today except as noted below. Following the cessation of the Indian wars and the annihilation of the great buffalo herds, cattle and sheep ranchers moved into north-central Montana. The initial operations were large, with thousands of head of livestock and a few ranch headquarters.

After the disastrous winter of 1886-87 cattle operations declined, centering around the river valleys where hay could be raised to provide supplemental feed in the winter. Most of the ranch headquarters of this era were located in the most attractive areas for ranching and today are private land holdings. Major features located on public lands are likely to be more ephermeral things, such as corrals, sheepsheds, line camps and sheepherders stone piles. Like the overland freight trails of the steamboat era, these features are not well documented and are more likely to be discovered by systematic ground inventory than by record searchers.

Gold and silver were mined at several places after 1880 in the district and several boom towns were created, lasting in some places until about 1915. Most of the old mining camps are not completely ghost towns still having a few residents. Many historic buildings and features remain in them, though.

Changes in the Homestead Act and promotions from the railroads helped create the last major influx of people into the region. With the promise of dry farming techniques, many people took up 160, 320 or 640-acre homesteads between 1910-1925. Because the Homestead Act required it, homes and outbuildings were put up on most homesteads. Since the amount of capital commanded by most homesteaders was small, many of the buildings were tarpaper shacks or of sod, though some were of logs. The early promise of dry farming did not prove out as droughts came, combined with falling agricultural prices after 1918. Later, with the nationwide depression of the 1930's, many homesteads were abandoned. In 1937 the Bankhead-Jones Farm Tenant Act passed to provide for the repurchase of some homesteaded land by the Government. Historic features from the homestead era may still be seen throughout the area.

AESTHETICS

Land Character

The most obvious characteristic of lands suitable for exchange is the lack of relief or variation in topography. Little variation in color, form, line and texture exists which is characteristic of the dry grasslands of southeastern Montana. Dominant colors consist primarily of browns and grays with light greens during greenup of the vegetation. Grasses are the dominant vegetation with limited shrubs on a couple of tracts.

Topography (form) of most of these lands is flat with a few tending toward slightly rolling. Overall, little variation exists.

Texture is mainly a monotony of smooth grass covered terrain. Rocks and variations in vegetation do not exist which are important for textural differences.

Line, which is affected by texture and topography patterns, is essentially non-existent on these types of lands.

Using the BLM's Recreation Information System (RIS), scenic quality of the majority of these lands has been determined at a low "C," where "A" is the highest rating allowed and "C" the lowest. It is estimated that even with management, the future rating would still be "C."

Visual Resources

Sensitivity levels for the entire district have not been completed. However, applying the VRM rating process to the exchange types of lands places them in Class IV as defined below:

> Class IV changes may subordinate the original composition and character but must reflect what could be a natural occurrence within the characteristic landscape.

RECREATION RESOURCES

Participation in specific recreational activities on the public lands varies with the season of the year. Hunting dominates the scene in fall; cross-country skiing and snowmobiling occur during the winter. Springtime recreation includes fishing, sightseeing and photography. Sightseeing, fishing, floatboating, picnicking and camping dominate recreation during the summer months. Overall, the public lands in the district support some type of recreational activity during all times of the year with the heaviest use occurring during fall hunting seasons.

Where access is available, lands suitable for exchange may provide some of this hunting opportunity. Other recreational pursuits are mostly undertaken on larger blocks of public lands or along waterways.

WILDERNESS

The wilderness inventory has been completed in accordance with Section 603(a) of the Federal Land Policy and Management Act (FLPMA). No units identified as wilderness study areas will be involved with the proposed action.

SOCIAL AND ECONOMIC CONDITIONS

Most of the public lands that would be considered for disposal lie within counties that are adjacent to the Upper Missouri Wild and Scenic River. However, any lands within the boundaries of the Lewistown District could be considered for exchange.

Almost all counties in the Lewistown District have an agrarian-based economy. In many of the counties the population has been declining due to out-migration resulting from a lack of employment opportunities.

Disposal types of lands are currently permitted to ranchers or grazing associations for grazing purposes. All ranchers who lease land being considered for exchange would be contacted. If the rancher was not interested in purchasing the land, the parcel would not be considered further. Therefore, rancher attitudes toward this program should be positive.

The same economic conditions described for the acquisition land area apply to the lands under consideration for disposal. In addition, because these are scattered, isolated parcels, they are difficult to manage efficiently and consequently are not cost-effective parcels for management purposes. Many of these tracts are currently surrounded by agricultural activities and, in many

cases, would become more efficient (i.e. productive) if incorporated into the surrounding (or adjacent) pattern of economic activity.

A more detailed discussion of the economic character of these areas can be found in the Lewistown District's Social Economic Profiles, Planning Area Analyses and the Upper Missouri Wild and Scenic River Management Plan.

CHAPTER IV

ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of the environmental consequences anticipated from the proposed action.

Part "A" refers to lands along the Upper Missouri Wild and Scenic River which BLM would like to acquire. Part "B" refers to those hard to manage and isolated tracts which BLM would be willing to exchange for river lands.

"A" UPPER MISSOURI NATIONAL WILD AND SCENIC RIVER

(LANDS BLM WOULD LIKE TO ACQUIRE)

CLIMATE

The proposed action would have no affect on the climate of the Upper Missouri Wild and Scenic River.

AIR QUALITY

Air quality would not be influenced by the land acquisition itself. However, if acquisition was to prevent these lands from being converted to agriculture or roaded and subdivided then it would be preventing an increase in particulate matter from dust. This would probably be an insignificant savings in relation to the dust created from agricultural fields on the benchlands adjacent to the Wild and Scenic River.

GEOLOGY AND TOPOGRAPHY

The acquisition of Missouri River land via exchange or purchase would have no impact on either geology or topography.

MINERALS

Natural gas and possibly coal and oil are the only known energy resources located within the areas that would be acquired. In most cases, just surface, not mineral ownership of acquired lands would be obtained by BLM. Therefore, BLM would have little control over the surface protection of these acquired lands when subsurface values have been sold or leased to the oil and gas industry by the private owner. Leasing has occurred on most of these lands already.

Location of mining claims on Federal mineral - private surface estates and development of possible diamond-bearing formations would require an approved mining plan of operations which would consider the potential damage to wild and scenic river values. If a satisfactory plan could be developed, there would be no impact to the mineral developer. However, BLM has the authority to set conditions on the type and location of access which could create a conflict with the developer.

To date, there has not been a discovery of diamonds associated with the diatremes and the likelihood of a discovery is doubtful. Even if a discovery were made, the remoteness and ruggedness of the country would preclude large-scale economic development at this time and in the forseeable future.

SOILS

Little or no environmental impacts to soils would result on the newly acquired land. The present use of the land, primarily grazing, would generally be continued. Acquired lands that would have been subjected to developments (agricultural or other) in the future would become protected from such activities.

WATER

Other than gaining responsibility for additional watershed adjacent to the Missouri River, little or no impacts would result by acquisition of the private land. Water quality on some of the acquired lands that have potential for subdivision or agricultural developments would remain the same; whereas, if the development had occurred the quality would have lowered and sediment yields increased over the long term.

VEGETATION

An opportunity would exist to begin intensive management on relatively large blocks of acquired land. However, the need for improved range quality isn't always paramount in the vegetational system, excellent soil stabilizing plants or vegetation that provide positive watershed cover often are wholly unsatisfactory forage plants.

The primary impact of additional public lands on the River Management area vegetation would be the slow, seral plant association changes that eventually follow imposition of a comprehensive Range Management Plan on the varied supervision systems of many former owners.

The end results of public ownership of the Upper Missouri River Lands would undoubtedly be beneficial but very slow in coming and moderate in their short-term effects.

Thus forage species in the river area vegetational biome are amenable to manipulation and improvement but the overall vegetational complex reached equilibrium over a long period of time and is therefore not likely to change rapidly through addition of an acquisition program. Since there is no immediate need to disturb anything but deteriorating plant associations or watershed zones, the effect on the overall biome would be minimal and the impact of the acquired lands on the existing vegetation would also be limited.

FORESTRY

Current use of forest products in the Wild and Scenic River management area consists almost exclusively of gathering firewood for camp use and the occasional cutting of small trees for replacement of fence or corral posts.

The primary value of woodland and conifer areas along the river at present, other than shade for cattle and wildlife cover, is for the beauty and atmosphere they contribute to the river experience. Thus addition of the Upper Missouri acquisition lands would result in an improved opportunity to protect, manage and study the somewhat limited but valuable forest resource.

GRAZING BY LIVESTOCK

The addition of these acquisition lands would have a positive effect on range vegetation.

Grazing is not closely supervised on the river. There are few boundary fences and the rangelands have long been subjected to a variety of uncoordinated grazing systems. River bottom range conditions are not impoverished, nor are they producing close to their potential. Present productivity is moderate and overall range condition is slowly deteriorating.

The addition of relatively large tracts of public rangeland within the river area would increase the incidence of planned grazing, eliminate grazing trespass, encourage range improvements and make intensive management for improved forage quality feasible.

Impacts on the range resource appear over a relatively long period of time but produce definite effects on the forage and eventually on the river bottom environment.

WILDLIFE

The main impact the land exchange would have on wildlife is increased public hunting opportunities and protection from future developments and potential subdivisions along the river bottom. Acquisition of river bottom and adjacent lands would provide blocks of land managed for public recreation. This is beneficial to wildlife because the land would remain in native vegetation and not be converted to agricultural use or subdivided for development. However, increased public access may result in increased hunting pressure.

Shoreline cottonwood groves are an important concern, particularly for critical wildlife habitat for hawks, owls and Great Blue Heron rookeries during the summer, and wintering areas for the Bald Eagle. Acquisition of river shoreline would ensure a secure wintering area for the Bald Eagle.

Mule deer are dependent on the river bottoms and adjacent lands for summer range. Any diversion of the native range would reduce mule deer summer range and reduce the size of the mule deer herd.

With acquisition of these lands a consolidated landownership pattern would emerge, and would make coordination of wildlife management less complex.

PREHISTORIC AND HISTORIC FEATURES

In acquiring control of the river lands, the Bureau would be gaining access to a number of significant historical and archeological resources such as fur trade posts, steamboat landings, homesteads, Lewis and Clark campsites, and prehistoric occupation sites. The proposed action will thus have a beneficial effect on the river lands because BLM could provide protection of the critical values for which the Upper Missouri Wild and Scenic River Management Area was established. This public ownership would increase interpretive opportunities and provide a greater opportunity for increased knowledge of historic and prehistoric resources.

AESTHETICS

The anticipated impacts of the proposed action would be favorable from the aesthetics standpoint. Completion of the land exchange would insure against developments and associated uses detrimental to the visual resources of the area.

RECREATION

The proposed action would result in a continued and presumed increase in recreational use of the area. Visitor use demands will continue to increase according to the 1978 Upper Missouri Wild and Scenic River Management Plan, regardless of what action takes place. However, the opportunity to pursue recreational activities will vary tremendously depending on whether or not BLM is successful in acquiring tracts of land important to the recreationist.

Opportunities for sightseeing (scenic, historical, and zoological), hunting, fishing, and enjoyment of natural and primitive values should increase.

Consolidation of these lands into a block of public land would facilitate use and enjoyment by the general public. The public lands would be afforded the necessary protection to preserve the natural and primitive values. Access to these important recreational areas would be insured for this and succeeding generations. This would be a very significant long-term beneficial consequence of this acquisition program.

SOCIAL AND ECONOMIC CONDITIONS

Purchase of river lands by the BLM would have a positive or neutral impact on the affected individuals. For those ranchers who are currently financially troubled, money from the purchase of these lands would provide a much needed source of income. Some ranchers may welcome the chance to sell their river land and purchase more easily managed land elsewhere. Those individuals not interested in selling their land would not be impacted.

The purchases would decrease the county property tax base and therefore decrease the money available for local services. However, the land being considered represents less than .001 (1/10 of 1%) of the total area of the counties and the resulting tax loss would not significantly impact service provisions.

Though not assessed for this study, regional and national general attitudes would probably be positive toward the purchases because key land along a nationally significant river would be acquired. The local key individuals that have been contacted expressed varied opinions. Most were positive or neutral toward the purchases. However, a few questioned the BLM's ability to manage more land along the river, expressed concern about the loss of property taxes and questioned whether the Federal Government should be acquiring more land for any reason. The involvement of a third-party proponent to aggregate exchange parcels was also questioned.

Analysis of economic impacts from river land acquisition would consider any changes in gross payments, i.e. BLM payments in lieu of taxes (PILT) to counties involved and any expenditures generated from BLM development of the tracts. In addition there could be some increased expenditures associated with greater public use of the sites. However, in this case, it does not appear that changes would be significant in either a local or regional perspective. In an areal context, the net change in landownership (i.e. decreased private acreage, increased BLM acreage) in the study area represents an insignificant percentage change in the existing land use. Consequently the general economic implications of land use/ownership changes of this sort can be considered insignificant.

The Federal PILT payments are based on the acreage of certain public lands within county boundaries. Assessed value of the land in question is <u>not</u> utilized in calculating PILT payments. Furthermore, PILT payments are made only if funds are made available annually by Congress through legislation.

Total PILT funds for the State of Montana are shown below:

FY-1979 - $10.8 million
FY-1980 - $8.1 million
FY-1981 - $7.7 million
FY-1982 - $6.9 million (estimate)

As these figures show, the (estimated) FY-1982 figure of $6.9 million is 65% of the FY-1979 total, indicating that there is a downward trend in PILT payments to the State of Montana. The implications of this downward trend in PILT payments are that those counties which contain large Federal acreages would be in a better position in terms of property tax revenues, if Federal lands pass into private ownership and are taxed accordingly.

"B" - ISOLATED TRACTS OF LAND

(DISPOSAL LANDS)

CLIMATE

The proposed action would have no effect on the climate where lands could be exchanged.

AIR QUALITY

Air quality would not be influenced by land exchanges themselves. If the purchasers of public lands put them into agricultural production, it's possible that an increase in particulate matter in the air could occur. The degree of change in particulate matter cannot be projected.

GEOLOGY AND TOPOGRAPHY

The mere exchange of land would have no impact on either geology or topography.

MINERALS

BLM would retain subsurface ownership of exchange lands. Exchange types of lands are generally not valuable for minerals, other than oil and gas. If lands considered for exchange are encumbered with mining claims, in all likelihood, they would be dropped from this category.

On lands leased for oil or gas, BLM would apply strict surface protection standards on the minerals industry to prevent surface degradation. Thus, the level of impact should be similar whether or not BLM was to retain surface ownership or exchange it.

SOILS

Depending upon which lands are exchanged, the BLM would lose control of various acreages of cropland, marginal cropland and rangeland.

The principal impact to soil would occur if rangeland was converted to cropland. Erosion would probably be greatest when the land is first converted, but will continue at an increased rate in comparison to that occurring on native rangeland. However, approximately 10-15% of the land could fall into this category. It is not known at this time how much land would be farmed.

WATER

Water quality of the exchanged land may be adversely affected or enhanced, depending on the management practices used by the new landowner.

If the land were exchanged and put under cultivation, erosion could occur and the sandy soils would be most susceptible. Again, erosion would be greatest initially but would continue as long as agriculture persists.

If there was no change in land use on the selected lands, there would be no impact on the water resource as a result of an exchange.

VEGETATION

Because the disposal lands are essentially isolated small parcels of public grazing lands comprising relatively minor parts of individual agricultural operations, impacts on the vegetal cover will be minimal. In some cases parts of an exchange parcel may be cultivated and added to an ongoing farming enterprize; but for the most part these typically rough surfaced exchange tracts would become minor additions to deeded lands and neither the manner of their use nor the vegetational aspects can be expected to change significantly.

Disposal lands comprise minor portions of larger agricultural enterprises. Their management is consequently custodial in nature. Thus, if they were retained in public ownership they would continue to be inspected periodically for proper care and utilization. The existing vegetal cover would be maintained in its present condition, or possibly improved as needed, and the vegetational changes would be minimal.

FORESTRY

Forest operations throughout the land exchange area are not extensive and the market for forest products continues to be depressed throughout the state. Consequently, the loss of forest product potential that may follow exchange to private ownership of those few small timbered tracts of exchange lands containing merchantable timber would be insignificant. The impacts on the forest biome would therefore, be minimal at present and could be expected to remain so in the foreseeable future.

GRAZING BY LIVESTOCK

The disposal lands are essentially isolated, small tracts of topographically rough terrain whose best use is grazing. In some cases, parts of these lands are suitable for cultivation and a few private owners could be expected to add them to their farming enterprise. Some loss of grazing capacity of exchange lands would, therefore, follow conveyence to private ownership. However, the total area converted to crop production would be restricted both by topography and access; the major portion of the exchange lands would continue to be grazing land. Overall, the loss of forage production would be minimal and the possibility of deteriorating range condition on lands no longer subject to BLM custodial care would be the most significant impact.

WILDLIFE

The possibility for conversion of the land to agricultural production would be increased. Such conversion would mean direct loss of habitat for species such as pronghorn antelope, mule deer, and sharp-tailed grouse. Although the exchange lands suitable for agriculture are, for the most part, not critical wildlife habitat, the cumulative effect of conversion to agricultural production would be detrimental to most

wildlife. In some cases, an island of native range lying within a large area of agriculture fields has become significantly important to a local wildlife population because of its uniqueness and cover it provides. Conversion of this "island" to agriculture may very well destroy the wildlife population dependent on it.

If continued use of these lands is for livestock range, there would be essentially no change in habitat assuring the same stocking rate for any of the wildlife species in the area.

PREHISTORIC AND HISTORIC FEATURES

The potential adverse impact of the exchange would be loss of Federal control and ownership of any significant cultural resources present in the transferred lands. Once the lands are transferred out of Federal control, the laws which provide protection to any cultural resources located on the lands will no longer apply. This may ultimately lead to the destruction of cultural resources through future land use changes. However, many of the potentially transferable parcels of land are not suitable for developments or land use changes, and therefore, destruction of cultural resources may never occur from these activities.

AESTHETICS

Should the future management of selected lands change to agricultural production there would be more acreage of plowed fields each spring and fall presenting soil vegetation contrasts.

RECREATION

Private ownership would put access to these various land tracts at the discretion of the owner, who may or may not allow hunting. The potential loss of hunting opportunities would probably be the most important concern.

SOCIAL AND ECONOMIC CONDITIONS

Since the affected ranchers were assured that the land would not be sold in the short term if they were not interested in purchasing it, or had no objection to another party purchasing it, this opportunity would appear to offer only positive benefits to these ranchers. Ownership of these lands would enable them to manage their operations without governmental restrictions, which would be desirable both economically and socially. However, some ranchers may feel pressured to purchase land at this time even though they are not in a financial position to do so. (Many of the ranchers expressed concern over what might be the assessed value of the land, feeling the value may be too high.) Other ranchers may feel pressured to purchase the land while it is available, although their first choice might be to continue to receive the relatively inexpensive grazing permit. If policy were to change and land were offered to individuals other than the current permittees, the impacts would be more diverse in nature and greater in magnitude.

Purchase of these lands by the rancher would increase the county property tax base and therefore make more money available for local services. This increase would currently be insignificant. Even if BLM payment in lieu of taxes continues to decrease in the future, the total impact would not become significant.

Local and national general attitudes toward the sale of public lands have not been directly assessed. Key local individuals view the sales favorably although there is concern regarding the price being charged, the involvement of a third-party proponent and the acquisition of river land. Local people, generally, would see the lessening of Federal control over local lands as a positive occurrence. However, there could be negative feelings if an individual who was not a permittee wished to purchase a parcel of land. National attitudes would probably be positive if the project were viewed in its entire context of exchanging lands to acquire key river sites.

Disposal of the isolated BLM tracts to private ownership could result in increases in the productivity of these tracts. This would be especially true in cases where the adjacent landowner could incorporate these tracts into their overall management scheme. Additionally there could be a net increase in property tax revenues in those cases where BLM's payment is lieu of taxes would be less than the property tax payments from private individuals. However, as mentioned above, these increases would in most cases, be insignificant in a local or regional context.

CHAPTER V

CONSULTATION AND COORDINATION

An active public involvement process was undertaken at all levels to aid in developing this programmatic assessment (EA).

The Havre and Judith Resource Areas as well as Lewistown District Office personnel contacted the following groups and individuals during 1982:

A. COUNTY COMMISSIONERS
   1. Fergus
   2. Petroleum
   3. Chouteau
   4. Toole
   5. Blaine
   6. Judith Basin
   7. Hill
   8. Liberty

B. COOPERATIVE STATE GRAZING DISTRICTS
   1. Grass Range
   2. Winnett
   3. Flat Willow
   4. Chain Buttes
   5. Indian Butte
   6. Williams Coulee
   7. Crooked Creek
   8. Weede
   9. Blaine County

C. MISCELLANEOUS AGENCIES AND ORGANIZATIONS
   1. Soil Conservation Service District Representative - Fergus/Petroleum Counties
   2. Soil Conservation Service District Representative - Chouteau County
   3. Soil Conservation Service District Representative - Judith Basin County
   4. Federal Land Bank Association of Lewistown
   5. Central Montana Production Credit Association

D. Individual Grazing Permittees and/or Adjacent Landowners of either river lands or lands that BLM may wish to exchange. Approximately 160 individuals were contacted.

In addition, the Montana State Office in Billings, consulted with other key individuals and agencies. These included: the Montana Congressional Delegation, the Montana Governor's Office, the Montana Department of Fish, Wildlife, & Parks, the Montana Department of State Lands, the Montana Department of Natural Resources and Conservation, the Montana Stockgrowers, the Montana Association of State Grazing Districts, the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service and the Western Environmental Trade Association.

LIST OF PREPARERS

This environmental assessment was prepared by specialists, BLM's Montana State Office (MSO), the Lewistown District Office (LDO), the Judith Resource Area (JRA), and the Havre Resource Area (HRA). In addition, expertise and review was provided by a number of other specialists employed by the Lewistown District.

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PUBLIC LAW 94-486 -- OCT 12, 1976

Public Law 94-486
94th Congress

An Act

To Amend the Wild & Scenic Rivers Act, & for other purposes.

Oct. 12,1976
(S. 1506)
Wild and Scenic Rivers Act Amendments.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I -- FLATHEAD, MONTANA

Sec. 101. Section 3(a) of the Wild and Scenic Rivers Act (82 Stat. 906; 16 U.S.C. 1271 et seq.) is amended by adding the following new paragraph at the end thereof:

16 USC 1274.

"(13) FLATHEAD, MONTANA -- The North Fork from the Canadian border downstream to its confluence with the Middle Fork; the Middle Fork from its headwaters to its confluence to the South Fork; and the South Fork from its origin to the Hungry Horse Reservoir, as generally depicted on the map entitled "Proposed Flathead Wild and Scenic River Boundary Location' dated February 1976; to be administered by agencies of the Departments of the Interior and Agriculture as agreed upon by the Secretaries of such Departments or as directed by the President. Action required to be taken under subsection (b) of this section shall be taken within one year from the date of enactment of this paragraph. For the purposes of this river, there are authorized to be appropriated not more than $6,719,000 for the acquisition of lands and interests in lands. No funds authorized to be appropriated pursuant to this paragraph shall be available prior to October 1, 1977."

Appropriation Authorization.

TITLE II -- MISSOURI, MONTANA

Sec. 201. Section 3(a) of the Act is further amended by adding at the end thereof the following new paragraph:

"(14) MISSOURI, MONTANA -- The segment from Fort Benton one hundred and forty-nine miles downstream to Robinson Bridge, as generally depicted on the boundary map entitled 'Missouri Breaks Freeflowing River Proposal,' dated October 1975, to be administered by the Secretary of the Interior. For the purposes of this river, there are authorized to be appropriated not more than $1,800,000 for the acquisition of lands and interests in lands. No funds authorized to be appropriated pursuant to this paragraph shall be available prior to October 1, 1977."

Appropriation Authorization.

Consultation.
16 USC 1274.
Note.

Sec. 202. After consultation with the State and local governments and the interested public, the Secretary shall, pursuant to section 3(b) of the Wild and Scenic Rivers Act, and within one year of enactment of this Act --

(1) establish detailed boundaries of the river segment designated as a component of the National Wild and Scenic Rivers System pursuant to section 1 of this Act (hereinafter referred to as the "river area"): Provided, That the boundaries of the portion of the river area from Fort Benton to Coal Banks Landing and the portion of the river area within the boundaries of the Charles M. Russell National Wildlife Range shall be drawn to include only the river and its bed and exclude all adjacent land except significant historic sites and such campsites and access points as are deemed necessary by the Secretary, and to which the Secretary finds no reasonable alternative, as set forth in the management plan required pursuant to clause (2) of this section; and

(2) determine, in accordance with the guidelines in section 2(b) of the Wild and Scenic Rivers Act, which of the three classes -- wild river, scenic river, or recreation river -- best fit portions of the river segment, designate such portions in such classes, and prepare a management plan for the river area in accordance with such designation.

16 USC 1273.

Management.
16 USC 1274
Note.
16 USCS 1271
Note.

Sec. 203. (a) The Secretary of the Interior (hereinafter referred to as the "Secretary") shall manage the river area pursuant to the provisions of this Act and the Wild and Scenic Rivers Act, and in accordance with the provisions of the Taylor Grazing Act (48 Stat. 1269), as amended (43 U.S.C. 315), under principles of multiple use and sustained yield, and with any other authorities available to him for the management and conservation of natural resources and the protection and enhancement of the environment, where such Act, principles, and authorities are consistent with the purposes and provisions of this Act and the Wild and Scenic Rivers Act.

Land acquisition.

16 USC 1277

(b)(1) The Secretary may acquire land and interests in land only in accordance with the provisions of this Act and the Wild and Scenic Rivers Act and the limitations contained in section 6 of that Act and only: (A) at Fort Benton for the visitor facility as provided in sub-section (g)(2) of this section; (B) at the site of Fort McKenzie; (C) in that portion of the river area downstream from Fort Benton to Coal Banks Landing for historic sites, campsites, and access points in accordance with section 202 (1) of this Act; and (D) in that portion of the river area downstream

from Coal Banks Landing so as to provide, wherever practicable and necessary for the purposes of this Act and the Wild and Scenic Rivers Act, rim-to-rim protection for such portion.

Condemnation.

(2) In accordance with section 6(b) of the Wild and Scenic Rivers Act, the Secretary shall not acquire fee title to any lands by condemnation under the authority of that Act or this Act, except that the Secretary may use condemnation when necessary and within the limitations on acquisition set forth in clause (1) of this subsection to clear title, acquire scenic easements, or acquire such other easements as are reasonably necessary to give the public access to the river segment within the river area and to permit its members to traverse the length of said river area or of selected portions thereof.

Development.

(3) The Secretary shall, to the extent feasible, give priority in expenditure of funds pursuant to this Act for the acquisition and development of campsites and historic sites, including the site of the visitor center at Fort Benton and the site of Fort McKenzie.

Easements.

(c) Consistent with the provisions of this Act and the Wild and Scenic Rivers Act, the Secretary may issue easements, licenses, or permits for rights-of-way through, over, or under the lands in Federal ownership within the river area, or for the use of such lands on such terms and conditions as are in accordance with the provisions of this Act, the Wild and Scenic Rivers Act, and other applicable law.

Bridge construction.

(d) The Secretary is authorized to permit the construction of a bridge across the river in the general vicinity of the community of Winifred, Montana, in order to accommodate the flow of north-south traffic. Such construction shall be in accordance with a plan which is mutually acceptable to the Secretary and State and local highway officials, and which is consistent with the purposes of this Act and the Wild and Scenic Rivers Act.

Pumping facilities and associated pipelines.

(e) To the extent and in a manner consistent with the purposes of the Wild and Scenic Rivers Act the Secretary shall permit such pumping facilities and associated pipelines as may be necessary to assure the continuation of an adequate supply of water from the Missouri River to the owners of lands adjacent to the river and for future agricultural use outside the river corridor. The Secretary is authorized to permit such pumping facilities and associated pipelines for use for fish, wildlife, and recreational uses outside the river corridor.

(f) The Secretary shall permit hunting and fishing in the river area in accordance with applicable Federal and State laws, except that he may designate zones where, and periods when, no hunting or fishing shall be permitted for reasons of public safety or administration.

Hunting and fishing.

(g)(1) The Secretary, acting through the Bureau of Land Management, shall exercise management responsibilities in the river area for:

(A) the grazing of livestock;
(B) the application of the United States mining and mineral leasing laws;
(C) the management of fish and wildlife habitat;
(D) the diversion and use of water for agricultural and domestic purposes;
(E) the acquisition of lands and interests therein;
(F) the administration of public recreational uses of, and any historic sites and campsites in, the river area; and
(G) all other management responsibilities except those set forth in paragraph (2) of this subsection.

(2) The Secretary, acting through the National Park Service, shall be responsible for the construction, operation, and management of any visitor facility in or near Fort Benton which is found necessary in accordance with the management plan developed pursuant to section 202 and the provision, at such facility, of interpretive services for the historic, archeological, scenic, natural, and fish and wildlife resources of the area.

Visitor facility, construction.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 94-1657 accompanying H.R. 15422 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 94-502 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD:
Vol 121 (1975): Dec. 4, considered and passed Senate.
Vol 122 (1976): Sept. 27, considered and passed House, amended in lieu of H.R. 15422.
Sept. 28, Senate concurred in House amendments.

Appendix 1.2

IN REPLY REFER TO:

United States Department of the Interior 1608(202)

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

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DEPT OF INTERIOR
MONTANA STATE OFFICE
BILLINGS, MONTANA

March 25, 1980

Instruction Memorandum No. 80-401
Expires ~~9/30/81~~ 9/30/82

To: All Washington and Field Officials

From: Director

Subject: Amending Management Framework Plans

The planning regulations (43 CFR 1601) include an amending process. This memorandum provides operational guidance for completing management framework plan (MFP) amendments. Offices considering amendments to MFPs should study the regulations, which contain numerous references to plan amendments, as well as this memorandum to insure compliance.

A. Regulation Features

Regulation provisions and requirements for making a plan amendment apply equally to both management framework plans and resource management plans. This also includes transition period MFPs. This is true because under the provisions of section 1601.8, Transition Period, a proposal which is not in conformance (reference Instruction Memorandum 80-109) may be considered "through a management framework plan amendment using the provisions of 1601.6-3(b)." The provisions of section 1601.6-3, entitled Changing the Resource Management Plan, and paragraph (b), Amendment, thus prescribe the regulatory standards for conducting all amendments.

The above provisions are important; a separate approach for amending MFPs is not provided for in the regulations. The provisions of section 1601.6-3(b) and related provisions, such as those dealing with public involvement, environmental analysis and interagency coordination and consistency, are mandatory for MFP amendments as well as RMP amendments. (The preamble published with the final rule-making in the Federal Register on August 7, 1979, discusses various considerations including public comments pertinent to the plan amendment process adopted in the regulations.) We can, however, provide appropriate variation in procedure, based on the nature of the amendment. This variation is specified later in this memorandum, particularly in explanation of how MFP amendments can be used to consider different kinds of proposals.

B. Purpose of Amendment

An MFP amendment is used to consider proposals which are not in conformance with the plan but warrant further consideration before a resource management plan is prepared. Conformance is defined in 1601.0-5(c). If a proposal is not in conformance with an existing MFP it may, of course, be denied on that basis. All nonconforming proposals do not automatically require consideration through an MFP amendment. The amendment process enables the MFP to become a dynamic document, allowing for new issues to be addressed as they arise, if appropriate, and not having to await RMP preparation. Also note CEQ regulations 1508.28 regarding addressing issues which are ripe for decision.

C. Nature of Amendment and Approach to be Used for Compliance with NEPA and Planning Regulations

Proposals considered through the amendment process can span the spectrum from modest sorts of changes to changes of a substantial nature for a portion of the plan. The amendment process is flexible to the extent documentation may be tailored and scaled to the proposed action being considered. Variation in approach is prescribed based on the significance of environmental impact and the role of the MFP amendment in a program's decisionmaking sequence. However, none of the basic steps (e.g. public involvement, environmental analysis, interagency coordination and consistency determinations) of section 1601.6-3(b) are skipped.

Three general categories of MFP amendments are anticipated. These are described below and procedures for making amendments in the different categories are outlined.

Category 1: The proposal/proposals considered in the MFP amendment do not, based on preliminary analysis, appear to involve significant environmental impact and no ACEC in which the Director has concurred in the designation will be adversely affected. EIS documentation is not required. If analysis during the amendment reveals significant environmental impacts, the proposal moves to a category 2 situation. This situation usually involves only one MFP, but could involve more. The analysis and documentation completed in the amendment process are combined as much as possible with any other Bureau analysis and documentation requirements associated with the proposal.

Category 2: The proposal/proposals considered in the MFP amendment are known, based on preliminary analysis, to have a significant environmental impact, or a Director approved ACEC may be adversely affected. An EIS is required. There is no additional analysis nor detailed plan approval step between the MFP amendment decision and the proposal decision. Situations in this category often involve two or more MFPs. In some instances, for example long right-of-way proposals, quite a few MFPs could be involved. Separate EISs are not required for each MFP. A

single EIS is permissible covering all MFPs involved and the proposed action. Documentation of the MFP amendment analysis, including the EIS, and any other documentation requirements associated with the proposal are combined as much as possible.

Category 3: The proposal/proposals considered in the MFP amendment would have significant environmental impact, if implemented, but the program process involved is distinguished by the requirement for an additional analysis and planning decision step between the MFP amendment conclusion and the proposal decision. The MFP conclusion is not an implementable decision. An EIS is required as part of the additional analysis, and that EIS will analyze the impact of the MFP amendment conclusion. One or more MFPs may be involved. The coal program strategy illustrates this situation, since the MFP coal amendments constitute only the first part of a decision process. Conclusions about "areas acceptable for further consideration" are followed by more detailed coal activity planning and a regional coal EIS. Conclusions about "areas unsuitable" may be followed by a subsequent formal unsuitability designation.

D. Amendment Procedure for Each Category of MFP Amendment

The following procedures are provided as general guidance to accomplish MFP amendments. These procedures will be refined as the Bureau gains additional experience in the amendment process and may be augmented for specific program situations as necessary.

The key determinant as to what procedures are used in amending an MFP involves the significance or nonsignificance of environmental impacts. This is true because 1601.6-3(b) requires amendments having significant environmental impacts to be prepared under the same procedures used for preparation of a resource management plan. Thus field offices must be prepared to back up and use the category 2 (full RMP procedures) if the environmental analysis should unexpectedly disclose significant impact.

The steps listed below for each category are required. However, there may be data collection, public involvement, and interagency government coordination at any point in the process if needed to provide a sound basis for decision.

1. Category One MFP Amendment Procedure - Required Steps

   a. Preplanning, scheduling, and budgeting, as necessary. (Some minor amendments can be handled in ongoing programs without specific identification in program and AWP submission.)

   b. Public and interagency coordination notices (1601.3(g) and 1601.4-2(a)).

c. Data collection, as necessary.

d. Description of proposed change in the MFP and alternatives (including no change) in terms relatable to the existing MFP.

e. Analyze the beneficial and adverse consequences of the change and alternatives using existing BLM environmental analysis procedure (BLM 1791). Accomplish any other analysis needed to fully understand the consequences of the proposed alternatives. This shall include analyzing impact of the proposal and alternatives on the existing MFP.

f. Select a preferred alternative.

g. Consistency review and modification of the preferred alternative as appropriate (1601.4-3).

h. District Manager recommends amendment to State Director. If State Director concurs, the District Manager makes decision and public notice of amendment decision (1601.6-3(b)(1)). This notice should clearly explain how the existing MFP is to be changed.

i. Protests will be received for 30 days following the notice (1601.6-1(d)(1)).

j. Amendment may be implemented after protests are resolved and at least 30 days after the public notice.

2. Category Two MFP Amendment Procedure - Required Steps

The RMP process steps are used since significant environmental impact is involved and an EIS needed, but the specific procedure is tailored to MFP documentation and is not a prediction of RMP procedures.

a. Preplanning, scheduling, and budgeting.

b. Public and interagency coordination notices (1601.3(g) and 1601.4-2(c)). These can be consolidated with the EIS scoping notice.

c. Issue identification - specific to the amendment proposal.

d. Planning criteria development - specific to the amendment proposal.

e. Publish planning criteria. If issues are well known in advance, the planning criteria may be drafted and included in the public notice (b) above to save elapsed time.

f. Data collection as necessary.

g. Management Situation Analysis - which for an MFP amendment is the process of posting new and relevant data in the PAA, URA, and MFP.

h. Formulation of alternatives. [Description of change in the MFP and alternatives (including no change) in terms relatable to the existing MFP.]

i. Estimation of effects of alternatives. Use current BLM environmental analysis guidance. This shall include analyzing the impacts of the proposal and alternatives on the existing MFP.

j. Select a preferred alternative.

k. Consistency review and modification of the preferred alternative as appropriate (1601.4-3).

l. District Manager recommends preferred alternative to State Director. If State Director concurs the results of the above steps are published as a draft MFP amendment and draft EIS for public review.

m. District Manager evaluates comments received, then selects and recommends amendment decision to State Director for review and concurrence.

n. Upon receipt of concurrence, a proposed plan amendment and final EIS are prepared and published.

o. Protests will be received for 30 days following the filing of the final EIS.

p. Amendment may be approved and implemented after protests are resolved and at least 30 days after filing the final EIS.

3. Category Three MFP Amendment - Required Steps

Section 1601.6-3(b)(2) does not require an EIS for each MFP amendment if a subsequent decisionmaking process addresses the impact of the amendment conclusions and if that subsequent decisionmaking process includes an EIS when the impact is environmentally significant. These requirements will be met by the subsequent EIS (see CEQ regulations 1508.18, 1508.23, 1508.27, and 1508.28). The RMP process steps are used, as in category 2. But, no EIS is required prior to approving the amendment.

a. Preplanning, scheduling, and budgeting.

b. Public and interagency coordination notices (1601.3(g) and 1601.4-2(c)).

c. Issue identification - specific to the amendment proposal.

d. Planning criteria development - specific to the amendment proposal.

e. Publish planning criteria. If issues are well known the planning criteria may be drafted and included in the public notice (b) above to save elapsed time.

f. Data collection as necessary.

g. Management Situation Analysis - which for an MFP amendment is the process of posting new and relevant data in the PAA, URA, and MFP.

h. Description of proposed change in the MFP and alternatives (including no change) in terms relatable to the existing MFP.

i. Analyze the beneficial and adverse consequences of the change and alternatives using existing BLM environmental analysis procedure (BLM 1791). Accomplish any other analysis needed to fully understand the consequences of the proposed alternatives. This shall include analyzing impact of the proposal and alternatives on the existing MFP.

j. Select a preferred alternative.

k. Consistency review and modification of the preferred alternative as appropriate (1601.4-3).

l. District Manager recommends amendment to State Director. If State Director concurs, the District Manager makes decision and public notice of amendment decision (1601.6-3(b)(1)). This notice should clearly explain how the existing MFP is to be changed.

m. Protests will be received for 30 days following the notice (1601.6-1(d)(1)).

n. Amendment may be <u>approved</u> after protests are resolved and at least 30 days after public notice. Note that, by definition, this type of amendment cannot be directly implemented.

E. Amendments having Multiple Purposes

When a single MFP amendment is being prepared that has actions falling into two or more categories, procedure for the most rigorous category involved must be used. However, if the proposals affect most of the decisions in the existing MFP to the point more than a significant portion of the MFP would be changed, a resource management plan should be scheduled.

F. Amending an MFP While the MFP is Under Revision

The December 3, 1979, Federal Register notice showing the planning schedule for the transition period identifies over 90 plans in some stage of preparation. Most of these are revisions of old MFPs. When schedules permit, the proposal that would normally require an amendment should be considered as part of the MFP revision. Circumstances may, however, require an amendment to be considered for an existing MFP while it is being revised. Preference Right Lease Applications for coal which have not been fully considered in an MFP may, for example, need to be considered in an amendment before an MFP scheduled for Fiscal Year 1982 or 1983 completion is finished. If an amendment is made concurrent with an MFP revision, the quality of analysis and documentation should permit the amendment to be endorsed and incorporated into the MFP revision under preparation. Concurrent amendments should be avoided if possible.

G. Number and Coverage of MFP Amendments

There are no restrictions on the number or geographic size of amendments. The amendment process may consider more than one proposal simultaneously.

H. Amendment Documents

MFP amendments shall be published and made available to the public on request. Copies of the amendment document are to be maintained in Bureau offices and other locations as prescribed by the regulations (1601.3(m)). Analytical and decision materials shall be retained as process records per section 1601.7-1. No specific format, other than that dictated by the RMP action steps outlined under D above and EIS requirements, is prescribed at this time. If an EIS is required, the plan amendment and EIS may be combined in a single document.

I. Guidance for Individual Program

Some Washington Office program staffs, for example Coal and Wilderness, are contemplating extensive use of amendments to facilitate consideration of various proposals at the land use planning stage. Consequently, the guidelines in this instruction memorandum may be supplemented by more specific program instructions when necessary. Pending development of this supplemental guidance, no amendments for the purpose of completing wilderness studies are to be initiated without prior Washington Office approval. Planning criteria to be applied and specific questions to be addressed during the Management Situation Analysis are examples of areas in which the amendment procedures may be supplemented for specific programs.

Further questions regarding amending MFPs should be sent to the Director (202).

Gerald E. Petty
Associate Director
Acting

Land Use Proposal/EA Clearance Review Sheet

EA Number _____

Title of Proposed Action and/or Serial Number:

Title of Programmatic EA or EIS if referenced:

Is an exception analysis to a reference document necessary and attached:

Yes _____ No _____

Originator _____ Date _____

The following clearances have been completed as indicated by the appropriate specialist's signature. Attachment of written documentation is optional. It is recommended that Cultural Resource Reports be attached.

Cultural Resources _____

Visual Resources _____

Wilderness _____

Threatened & Endangered (Plants) _____

Consultation with FWS Necessary _____ Unnecessary _____

Threatened & Endangered (Animals) _____

Consultation with FWS Necessary _____ Unnecessary _____

Water Rights Checklist Completed _____

Other Reviewers: _____

_____

_____

_____

_____

Consultation & Coordination:

_____

_____

_____

Environmental Coordinator _____ Date _____

APPENDIX 1.4

UPPER MISSOURI NATIONAL WILD AND SCENIC RIVER
ACQUISITION/LAND EXCHANGE POOLING

Format of Land Report

Title Page

The title page will list the legal descriptions of the private and public lands for each exchange (package).

Proposed Action and Alternatives/NEPA Compliance

The proposed action and alternatives must be stated in this section but any further or detailed discussions will reference the programmatic. This section should be very short.

Relationship of the Proposed Action to Land Use Plans

This section must make a very brief statement of the relationship between the proposed action and land use plans. The programmatic will be referenced for a discussion as to how this process constitutes an amendment to an MFP(s).

Environmental Documentation/NEPA Compliance

The programmatic EA will be referenced in this section by filing Form M-06-1790, Land Use Proposal/EA Clearance Review Sheet. Minimum clearances required include cultural resources, visual resources, wilderness, and T&E species. Copies of cultural resource reports will be attached and findings summarized. Any impacts not adequately addressed by the programmatic EA will be documented here with a narrative exception analysis.

Decision Factors

This section will discuss non-environmental decision factors that are specifically related to each exchange (package).

Recommendation/Rationale

This section will contain a recommendation and a concise rationale for the recommendation. This section should be very short.

Decision Record Page

This section contains a finding of no significant impact and decision on the proposed action. No action will reach this stage if it has a significant impact.

APPENDIX 4.1

PUBLIC LAND RECEIPTS

The following legislation outlines the methods by which a portion of federal receipts from public lands and resources are returned to the States of Montana, North Dakota and South Dakota and their counties.

1. Bankhead-Jones Farm Tenant Act of July 22, 1937

This legislation authorized federal purchase of privately-owned farmlands. Known as Land Utilization projects, these submarginal lands were incapable of producing sufficient income to support the family of each farm owner. The Act relocated the owner and family elsewhere and retired the submarginal land from agricultural production. Various tracts of these "acquired" lands were then added piecemeal during the ensuing years to national parks, forests, grazing districts, or reserved for other purposes. About 2 million acres scattered throughout the western states were transferred to the Department of the Interior for administration by BLM.

Montana contains about 1.8 million acres of land acquired under this legislation. Ten counties in the state receive annual payments derived from 25 percent of the net revenues produced on these lands primarily from mineral leasing and grazing. North and South Dakota do not have any lands acquired under the Bankhead-Jones Act.

2. Public Law 136 of August 31, 1951

Authorizes payment to the states as their 5 percent share of proceeds from the sale of public lands and materials within the respective states for the fiscal year.

3. Mineral Leasing Act of February 25, 1920, Sec. 35

Under this legislation, states receive a 50 percent share of bonuses, royalties and rentals received during the fiscal year from mineral leasing revenues. Prior to passage of the Federal Land Policy and Management Act of October 21, 1976, states received a 37½ percent share.

4. Taylor Grazing Act of 1934

Payments to the state under the Taylor Grazing Act are authorized under two sections of this historic legislation. Under Section 10 of the Act, states receive a 12½ percent share of grazing fees collected inside grazing districts (Section 3 payments). Most grazing lands in Montana are within grazing districts.

For leases issued under Section 15, (lands outside grazing districts) states receive a 50 percent share of grazing fees collected outside organized grazing districts. All grazing lands in North and South Dakota are outside grazing districts.

5. Payment in Lieu of Taxes, Public Law 94-565, October 20, 1976

Section 1 of this legislation provides for annual payments in lieu of taxes to units of local government for certain federal lands within their boundaries. For the States of Montana, North Dakota and South Dakota these payments are made direct to the counties.

Section 2 of this authority contains the formula by which the payments are computed.

Section 3 provides for an additional payment of 1 percent of the fair market value of lands added to the National Park and National Forest wilderness areas. The payments are made on October 1 each year.

RECENT ADDITIONS

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